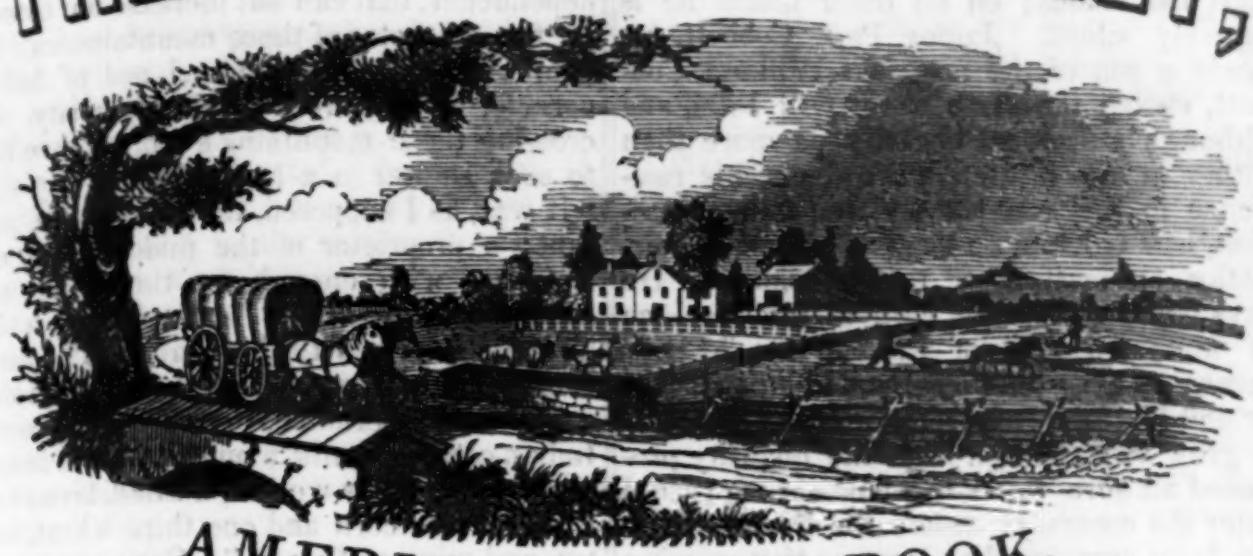
THE FARMERS' CABINET,

AND



AMERICAN HERD-BOOK.

DEVOTED TO

AGRICULTURE, HORTICULTURE, AND RURAL AND DOMESTIC AFFAIRS.

Perfect Agriculture is the true foundation of all trade and industry.—Liebig.

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For the Farmers' Cabinet.

Cultivation of Indian Corn in Europe.

Mr. Editor,—In looking into a work of travels among some of the wilder and less frequented portions of Europe, I was struck at the extent in which that noble vegetable, the staple of our country, Indian corn, is used. It may be a matter of equal interest and curiosity to some of your readers, to know what are the foreign opinions concerning it—what countries make use of it, and in what form, as well as the mode of cultivation. It is not easy to get at facts that give any clear ideas on those points. Very few of those who travel have any taste for agriculture; they are generally persons of leisure and pleasure, with minds of some refinement, but of little strength or activity—or idle and rich, and without any knowledge of any one subject of general interest. Their travels are for the purpose of ridding themselves of an accumulated excitement, that puts them in motion, without any definite purpose in view. But their habits of thought lead them to remark upon society and its customs, to examine churches, specimens of architecture, and other fine arts—perhaps to speculate in politics; while that great art, on which rests the welfare of nations, is completely neglected. There is something too humble in the simple and laborious art of agriculture, for such persons; and they forget that they themselves would never have reached their present pretensions—that they would perhaps be at the plough, and their fortunes torn to fragments, if it were not appreciated both by rulers and the people, or held no rank in the economy of nations.

Arthur Young, who travelled in France more than fifty years ago, says nothing more of the Indian corn than that it is an extremely good substitute for a fallow, but he gives neither its mode of cultivation, nor any one particular concerning it—a seeming contemptuous neglect, that may be easily accounted for, when we consider that the United States had at that time risen to very little importance, that her resources and power were very little known, or her capability of feeding the starving masses of other countries. From this writer, who made what he called an agricultural tour, we have gained very little information. Morris Birkbeck, who travelled in France in 1814, expressly also to examine its agriculture, has done no more for us than to make known, that in some parts Indian corn is *sown* in May, as an early fodder, and that

he saw women and children taking off the tops and blades; on all other points he is entirely silent. James Paul Cobbett, no doubt a son of the notorious William Cobbett, visited the same country in 1824, and although a lawyer, he tells us more than either of the farmers. No doubt his residence in this country, and his father's tuition, had led him to form a habit of observation on matters of rural economy. He says that he first saw corn in the province of Maine, a part of France, not by any means its most Southern, but in latitude 47° or 48° North. It was reported to him that it grew well, though from the quantity produced an acre, thirty-one bushels, we should infer the contrary; unless the French farmers have very peculiar ideas as to "growing well," or are contented with a small yield. "The people here use it only in the fatting of pigs, for which purpose it is considered, as it is in America, to be the best of all food. It is planted on ridges, which are about five feet apart; two rows of corn on every ridge. The plants are from a foot to eighteen inches apart in the row, and the rows about the same distance from each other."

This is all he has to say, and we infer that from its being so highly appreciated as food for pigs, it is not used as food by the nobler animal, man. As we go further south, it begins to grow in importance, but before we reach Italy, we shall find it universally used by the hardy mountaineers of the Tyrol, a race of men remarkable for their physical strength and high courage, and as they live almost exclusively on it, we may ascribe those noble personal attributes to the power it has of increasing muscular strength, and giving energy to the character. The French, who only give it to pigs, felt its power when they attempted to pass these mountains in some of Bonaparte's various invasions. The Tyrolese crushed his troops by thousands in their narrow passes. The late battle of Buena Vista, is another evidence of what it can do; nearly every man in Taylor's army was a corn-fed Western man, and no other men on earth could have withstood the physical weight and strength of five to one. The writer, to whom we have alluded as travelling in the Tyrol, Mr. Inglis, had sufficient taste and sensibility to leave large towns and their society, and strike at once into the recesses of the mountains. He travelled, as all men should, who wish to see a country, as a pedestrian. This gave him the opportunity of seeing those who are emphatically the people, of visiting the retired village, and the peasant's cottage; and the sketch he draws of a Tyrolese peasant's household, gives an idea of comfort and happiness, and hardy independence, that can but increase our esteem for the character of those mountaineers. He admits that the growth and use of Indian corn, form the sources of this prosperity. On crossing these mountains a storm drove him to seek shelter in a house by the way-side. "It was, as I supposed, the house of a peasant; a proprietor of the middle kind, not rich, but with enough for the wants and comforts of a family." As dinner was ready, he took his seat with the family. The party consisted of six persons, but the dinner, which is of more importance, "consisted of soup of Indian corn and milk, a piece of boiled bacon, about five pounds weight, a salad, bread two thirds Indian corn and one third wheat, butter, and wine of Botzen." Certainly a very substantial repast. After dinner the proprietor and his family went over his little fields with the stranger. The whole land owned by this peasant was about four acres; one third was devoted to Indian corn; "of the remaining two acres and two-thirds, about half an acre was in wheat, another half acre in barley, a quarter of an acre in flax, an acre and little more in grass and wood, and about a quarter of an acre in garden, which contained cabbage, potatoes, salad, and a few cherry trees. The Indian corn was all required in the establishment—about one-half for the family, and the other for winter provision for the cow." The wheat and barley were sold, and produced more than sufficient to purchase coffee, sugar, wine, such implements as were wanted, and clothing for the family. They had also formed a surplus in money. The flax was spun and wove and used in the family. The grass served as summer pasture for the cows; the wood supplied firing. The ground was cultivated by the owner and his son, and was remarkably clean and in excellent order. No cheese was made—the soup consuming all the milk. There was no stock but the cow, two pigs, a litter of young ones, and several hens. All this seems to us a beautiful picture of industry and content, and of wealth too, if we consider their few wants. The whole is due to the crop of Indian corn, that is used three times a day, as a soup; and forms, too, much the larger part of their bread. But we will descend from the mountains to the richer and more glowing climate of Italy; we shall find there that this grain is by far the most important article in the agriculture of that fine country. The richest and best cultivated land is in Piedmont, the climate too, probably the most delightful in Europe. It sustains a very large population, chiefly by being divided into small farms of about sixty acres; though few or none of these are

owned by those who cultivate them, but are farmed on shares. The farm descends, however, from father to son, as a kind of patrimony, without any renewal of the lease; the landlord making these small subdivisions of his large estate, for the purpose of having his land better cultivated. In this way, the amount produced appears very large, each farm being kept in the highest state of cultivation, and the whole of it being brought into use. A farm of sixty acres is divided into fifteen acres of meadow, forty-five arable, and sown with grain and clover, about ten acres of the latter. From this are fed eight oxen, thirteen cows, or young stock and a horse. One of the sources of profit is the fatting every year a pair of oxen. After being worked, they are at five years of age fed off, and sold often for two hundred dollars the pair. Indian meal is employed largely in bringing them into condition for the butcher. To cultivate a farm of this size, or to be more exact, forty-five acres, two pair of oxen are employed to do the work of two ploughs, a pair of three years old and a pair of steers, to do the lighter work, and a horse to thresh the grain and go to market. All the work seems to be beautifully executed. Chateauvieux says, "that nothing can be more perfect or neater, than the hoeing or moulding up the Indian corn when in full growth by a single plough, with a pair of oxen, without injury to a single plant, while all the weeds are effectually destroyed." Their course of cultivation is one that we should think in this country too exhausting; or rather too much so for the amount of manure we can make. The first year, Indian corn; second, wheat; third, clover; which is ploughed up after the first mowing and left fallow—fourth year, wheat. The capability of the soil to yield year after year good crops, under such a system as this, is an evidence of its fertility, though much is acknowledged to be due to the abundance of manure; of which the whole is put on the Indian corn. How much of this grain is produced an acre we cannot ascertain; it is spoken of as being considerable, but no particular quantity given. We may assume it to be large, as it contributes "more than any other article to the maintenance of almost *the whole country* population of Piedmont, who eat it in a variety of forms." Two of the modes of using Indian corn for food, are in the forms of farinata and pollenta. The first is made by throwing the meal into a pot of boiling water, and putting butter and oil with it; this makes a kind of soup, which appears the common dish among the people of the South of Europe. Pollenta is made in the same way as the last material, but without oil or butter. It is allowed to remain on the fire till of a consistency to be cut into slices; these are then put on the gridiron for a few minutes, and then we presume every one consults his own taste as to the disposing of them.

Having made known the mode of cultivating one of these small farms, it is a matter of curiosity to know what are its profits. It must first provide for the support of eight or nine persons, and maintain twenty-two head of stock; but we must bear in mind that the expenses are probab y very small, and the climate mild and constant. The profits will then be taken from the fattening every year two oxen, a cow, and two pigs; from the sale of silk and a small portion of wine; from sending to market all the wheat and other grain, vegetables and poultry. The Indian corn goes to feed the labourers and fatten stock; none of it appears to be sold. From these hasty details your readers can judge of the importance of Indian corn in the economy of other nations besides our own. It is cultivated through nearly all Italy, and to some extent in Spain; but as the course of crops appears the same in the different provinces, it is not perhaps of sufficient interest to go into any further history of this important grain.

A. L. Elwyn.

April 29th, 1847.

Animal Offals.

Of dried blood.—This liquid—especially when it has been subjected to boiling, which, by coagulating it, retards its decomposition in the ground—is found so useful to the growth of sugar canes, that it has been lately sent from Paris at a cost of two dollars the one hundred pounds, to the colonies, where it arrives, costing four dollars. Blood, in whatever state it is found, and from whatever animal it comes, offers, therefore, to the inhabitants of the country a valuable resource for manure, and already, in this view, it has formed the base of an important speculation in Paris.

The following is one of the simplest modes of employing it. Some earth free from clods is dried in the oven, after baking bread, care being taken to stir it from time to time with a rake; it requires about four or five times as much as there is of liquid blood; the hot earth is brought to the front of the oven, and is sprinkled with the blood to be preserved, while turned over and over with the shovel; the mixture is then baked over, and stirred with the rake till the desiccation is complete. It can then be put up in old barrels or boxes, sheltered from the rain, to be used when needed. The earth in this preparation is

useful, especially to present the blood in a suitable state of division, and to render its decomposition slower and more regular. We can know, moreover, what surface these mixtures will cover as manure, by recollecting that three thousand pounds of liquid blood give seven hundred and fifty pounds of blood coagulated and dried, which is sufficient to manure an acre. One hundred pounds of blood in this state, equal as a manure three hundred pounds of broken bones, or three loads of good horse-dung, weighing together seven thousand and two hundred pounds. It is a manure by far superior to those known and designated by the names of poudrette, oil cakes, &c.; it is inferior only to the dried and powdered flesh.

Of the entrails, &c.—All the internal parts of animals, such as the liver, lungs, brain, heart, and the offal of the entrails, should be cut or hashed as fine as possible, and then mixed along with the emptyings of the intestines, with earth thoroughly dried, the latter in the proportion of six times the bulk of the animal matters. When this composition has been well worked over with the shovel, it is spread at the rate of five tons to the acre.

This manure gives excellent results, and is particularly favourable to wheat crops. If it cannot be spread immediately after its preparation, it must be preserved in a trench or some other cool place, or at any rate in the shade and covered with earth.

Bones: explanation of the various results of their use in agriculture.—None of the hard substances, the remains of animal organization, offer more remarkable examples of various effects in its action as a manure, than the bones in different states. We find in the numerous agricultural memoirs on the subject, the most singular problems which practice could leave to be solved.

The bones which are found in masses of any considerable importance at the disposal of agriculturists and speculators, are presented in the following different forms: *Fresh*, such as have been taken from animals recently slaughtered, *more or less broken*, or *whole:* in each of these three states, their decomposition is almost always too slow, stimulated though it be by the well known influences of air, heat and moisture; but, all things being equal externally, enormous differences have been observed, and which seemed inexplicable, in the duration of the decomposition, and consequently in the useful effect produced in a given time.

Some particular experiments have led me to discover the cause of these apparent anomalies. Bones contain in their cellular parts and in various cavities, a fat substance, secreted by itself, of more or less consistence. This substance is free in the adipose tissue of all the crevices which conceal it, for it suffices to open a passage for it by cutting the bones and plunging them in hot water, to bring it out and see it swimming upon the surface of the liquid. The average proportion which can be obtained from the various bones of the butcher, is about .01, although the very spongy parts which enclose the most, contain even .05.

The proportion of fat matter extracted by this process, diminishes gradually as the bones are dried; it becomes almost nothing when the desiccation takes place at a high temperature, either in the sun or by a stove. It appears, indeed, that as fast as the water which filled the interstices of the bone has evaporated, the grease liquefied by the heat has taken its place. One of the effects of this penetration, has been to impregnate the net-work which encloses the phosphate and the carbonate of lime. This net-work already with difficulty decomposed on account of its cohesion and insolubility, protected moreover by inorganic substances interposed, becomes still less alterable when the greasy matter not only impregnates and defends it from the penetration of water, but, becoming gradually acidified, forms with the lime a calcareous soap, which M. d'Arcet has shown to be undecomposable under atmospheric influence.

Bones in this nearly undecomposable state should, of course, exert but an insensible action as a manure, at least, unless very minutely divided. This also confirms and explains the practical remark, that although spread upon the ground for four years, these bones scarcely lost 0.08 of their weight, while, when recently taken from animals and deprived of nearly all their grease by boiling water, they readily permit the decomposition of their organic net-work, and lose in the same time from twenty-five to thirty per cent. of their weight.

Let us notice three other curious and apparently singular results of the use of bones treated with steam.

The broken bones from which gelatine has been obtained by the action of water and heat, in various processes, form a residuum which has often been tried as a manure. In some experiments a number of cultivators have obtained from these residuums, the first year, more beneficial effects than from bones themselves. In others, an action almost equal to that of bones, but less durable, was observed. More generally, however, little or no favourable influence upon vegetation was obtained. A great number of analyses, attentively examined, have enabled me to per-

ceive the different conditions under which this residuum, apparently the same, produced three sets of phenomena so distinct.

Bones treated by the process in question leave a variable residuum; I have sometimes met with it containing from eighty to ninety-five per cent. of the azotic, organic, decomposable matter of the bones, sometimes containing from twenty-five to thirty-three, but more usually one or two per cent.; finally, it sometimes contains scarcely a few thousandths. The following are the causes and effects of these various proportions: the temperature is almost always high in these operations, to the degree of rendering the greatest part of the net-work soluble, and consequently the bones are disaggregated and easily broken. But, although soluble, the organic alterable matter can still be held in the interstices, either because the washings proper to draw it out have been operated insufficiently, or ill-directed; or further, because the steam may have been chiefly condensed upon the sides of the digesters. This matter soluble in the proportion of 0.8 or 0.9 of the contents of the bones, will act more rapidly as a manure, since its dissolution and decomposition will be more rapid under the same influences; but, instead of being prolonged four or five years, its action will be almost exhausted in one season—practice has always confirmed this deduction of theory. A washing better conducted but incomplete, easily accounts for the presence and solubility of 0.25 to 0.33 of gelatinous matter in the residuum; whence, also, we deduce the prompt action, but less and less durable effect than in the preceding case. As to the reduction of 0.01 or 0.02 at the most in the proportion of the azotic decomposable substance, it evidently makes the residuum inefficacious as a manure. But this state of the case results, as I have proved, from one of the two following circumstances or their concurrence:

When the bones operated upon in the large way have been cut only in the cellular parts and the grease extracted, the division not being sufficiently thorough, the washing or maceration not being sufficient, only from thirteen to fifteen per cent. of dry gelatine is obtained; there should, therefore, remain about fifteen per cent. of fibrous tissue, or the products of its decomposition; but these dregs are scarcely thrown into a heap before a brisk fermentation is developed and ammoniacal vapors are disengaged; thus, the greatest part of the organic matter disappears.

The second circumstance which equally produces a very poor residuum, is when a well-conducted treatment is applied to bones sufficiently divided, and finally, when they are exhausted by continued maceration, as in the processes of the hospitals.

We must not therefore generally expect to find in the manufactories of glue any but impoverished residuums and valueless as manures.

Hence the use of them has been abandoned by those cultivators, even who at first obtained beneficial results; the differences, however, are now easily explained, and a simple analysis, consisting in the exhaustion by boiling water of a portion dried and powdered, will suffice to test them, *à priori;* then drying and weighing anew the powdered exhausted substance, we shall find how much the boiling water has diminished the total weight, and consequently the proportion of soluble organic matter, all the rest being almost entirely inert as a manure, and able to act only as a calcareous amendment.

The application of bones to agriculture.—In their natural state bones reduced to powder are an excellent manure, which is spread in the average proportion of fifteen hundred pounds to the acre, and the influence of which is felt in a diminishing degree from three to five successive years, according to the soil and the seasons; all sorts of bones moreover are fit for this application, when the distance or want of communications does not permit the better part to be used for the arts which we shall speak of in a future division of the work;* and when, moreover, a machine can be procured to grind them, which is quite expensive in its first cost and requires a large expenditure of motive power.

However, in the absence of this machine, we shall often employ with advantage, especially in the intervals of field labour, the processes of breaking by hand, first cleaving the bones with an axe and then powdering them with a heavy mallet or sledge.

I have remarked that it is much easier to break bones when thoroughly dried and heated than when fresh; it will be best therefore to put them in the oven immediately after baking bread, and break them afterwards while they are warm.

In France broken bones are used as a manure in the department of Puy de Dôme; in Germany the practice is very extensive. Twelve bushels are there substituted for thirty-five loads of dung for an acre. But

* The bones used for the manufacture of animal black are not lost for agriculture, for we shall see that after having, in the state of powdered charcoal, served to refine sugar, they conceal a portion of coagulated blood, which conduces to render their effect as a manure very remarkable.

the English have applied this manure most in the large way. They derive from Russia and India considerable quantities of bones, besides a large part of those which result from their own large consumption of meat. A bushel of coarsely powdered bones costs the cultivators about one dollar and thirty cents; they use from fifteen to forty-five bushels to the acre; this manuring prolongs its effect during ten to twenty-five years, and enormously increases all the crops, especially those of grass and of turnips. It has been observed that a mixture of wood ashes of equal bulk, or two or three per cent. of saltpetre, renders this manure still more efficacious.

Bones in powder can be placed in the trenches with potatoes, or sown upon seed before passing the harrow or roller which covers it with earth.

It is sometimes preferred to mix them with the earth previously ploughed and harrowed, by passing the harrow and roller over them a second time.

If the bones were in fine powder, they could with advantage be placed upon the transplanted plants, and be covered up in closing the hole of the planter.—*Farmer's Mine.*

Farmers' Club, New York.

Osier Willow.—C. N. Bement presents two stalks of Osier Willow, of one year's growth. I have four rows 57 feet long, the rows three feet apart—I have just sold the spring cuttings for $4, to a German, for basket making.

Last spring I set out with cuttings one acre and a quarter, which when four years old, if they grow as vigorous and thrifty as then, four rows will produce at the rate of $100 per acre.

This willow flourishes best in a wet soil, too wet for grain or grasses.

I am informed that large quantities of this willow are imported from France, &c.

If it will command such a price, what crop would be more profitable?

D. Jay Browne—On Grand Island, in Niagra river, there is an extensive marsh, comprising about two hundred acres, covered with fir, resembling the Osier Willow. These willows have been used for wickerwork, and were found to be good.

Mr. Meigs—Will members please to state where, in this vicinity, they can be obtained?

Isaac Underhill of N. J.—James G. King, of Hoboken, has them on his farm.

Judge Van Wyck—The Osier Willow, like the whole family of the willows, is attached to low wet grounds, and the value of it seems not to be generally known.

Mr. Meigs—I found a very few Osier Willow cradles in Philadelphia more than forty years ago, and admiring them for their neatness, for their safety to the infant, which cannot injure itself by contact with its yielding nature—I thought it so superior to all the pine, cherry, mahogany, and oak cradles I had seen—I bought one, which has now cradled two generations for me, and is fit to cradle *ten more.* And if handsome baskets and boxes are made of it to bring any suitable produce to market, then the farmer will find a profit in the basket or box, as merchants formerly did by making regular trunks to send their goods in to this country, and as the Frenchmen do by sending us their choicest prunes in boxes, ornamented and useful for other purposes.—*Farmer and Mechanic.*

The Daisy.

Bright flower, whose home is everywhere!
A pilgrim bold in Nature's care,
And oft the long year through, the heir
Of joy or sorrow.

Methinks that there abides in thee
Some concord with humanity,
Given to no other flower I see
The forest through!

And wherefore? Man is soon deprest;
A thoughtless thing! who, once unblest,
Does little on his memory rest,
Or on his reason.

But thou would'st teach him how to find
A shelter under every wind;
A hope for times that are unkind,
And every season.

Wordsworth.

Be Economical.—No matter if your parents are worth millions, it is not the less proper that you should understand the value of money, and the honest, honourable means of acquiring it. What multitudes of young men, particularly in our cities, make shipwreck of reputation and health, and eventually of property, by neglect of this maxim. They are aware that their parents obtained their wealth by habits of industry, but they are ashamed of the name. They forget that wealth in this country passes rapidly from one to another, and that he who is rich to-day, may be poor to-morrow; or that he who relies on wealth amassed by his father, may end his days in a pauper-house. It is for the young man to say, whether by industry and economy he will secure competence and respectability; or by idleness, become worthless.—*Exchange Paper.*

From Downing's Horticulturist.

Culture of Tender Fruits in Cold Climates.

It is familiar to horticulturists, that warm low valleys, are more subject to night frosts than more elevated localities. Objects at the surface of the earth become chilled by the radiation of heat to the clear sky above, and cool by contact the surrounding air,—which thus becoming heavier, rolls down the sides of declivities, and settles like the waters of a lake in the lowest troughs. This effect is farther increased by the stillness which prevails in those sheltered places, favouring the more rapid cooling, by radiation of the exposed surfaces; while on hills the equilibrium is partially restored by the currents of wind. Independently of these causes, vegetation is more likely to suffer in such places from the succulent or unripened growth incident to the warmer position, and to the richer soil which more usually accumulates at the bottoms of valleys. The mucky soil also radiates heat more rapidly from its surface. The warmth in valleys, during the milder weather of winter, often swells fruit-buds, and severe cold following, destroys them. Higher and more bleak localities are not exposed to these variations, but are more uniformly cold; hence, for these five different reasons, such places are usually much the best for raising tender fruits.

These facts are familiar to many, but still are not so generally appreciated nor applied in practice, as they might be in many instances to very great advantage, in selecting grounds for orchards and gardens. Very erroneous conclusions even, have been adopted in consequence; and large parts of the Northern States are destitute of the finest fruits, from mistaken notions as to the practicability of their culture, or of their endurance of the climate.

Instances, showing in a strong light the principles already alluded to, may be of use to those who have given little attention to the subject.

The existence of colder air in valleys, on still, clear nights, has been obvious to every observing person riding rapidly over a rolling or broken face of country. The thermometer has often shown a difference of many degrees between a creek bottom and a neighbouring hill not fifty feet high. A very striking proof of this tendency was exhibited, at the time of a severe night frost, early in summer. The young leaves of the hickory had but partially expanded, and the fresh shoots, a few inches long, were succulent and tender. A few trees stood in a hollow about twenty feet deep, and after the frost all the leaves and fresh branches on the lower parts of the trees were black and dead, while all above the surface of this lake of cold air, were green and uninjured.

Many years ago, the writer attempted the cultivation of young peach trees, on a rich soil near the bottom of a valley. But every winter the newly set buds were destroyed, or not one in fifty escaped, and one half of the young branches were often killed. Learning the cause, the trees were removed to an adjacent elevation fifty feet higher, when the difficulty was at once obviated.

In the winter of 1845–6, when the severity of cold on a clear night sunk the thermometer several degrees below zero, after the peach buds had been swelled by a few warm days, trees which stood on a hill thirty feet higher than the neighbouring creek valley, lost nine-tenths of their blossoms, while on another hill twenty feet still higher, nine-tenths escaped. The lake of cold air which covered the smaller hill, did not reach the top of the larger.

In a large portion of the State of New York, more especially in the region of the southern tier of counties, nearly all attempts to raise the tender fruits appear to have been relinquished. The inhabitants of the larger villages and their vicinity, places mostly situated at the bottoms of deep valleys, being persons of more enterprise and means, have tried the experiment—and for obvious causes have failed—and hence the conclusion that the climate was necessarily fatal. But there is strong reason to believe, that *through all the southern counties of New York, extending from Lake Erie to the Hudson, peaches may be raised with little difficulty*, by a proper selection of locality, and by an observance of the principles already pointed out;—that is, by selecting elevated spots, and dry and firm soils, and avoiding mucky ground in valleys. In the town of Spencer, in Tioga county, N. Y., near the head of Cayuga inlet, peaches have withstood the climate and done well, at an elevation of 700 feet above Cayuga lake. A striking instance was shown the writer last summer in Cohocton, Steuben county. The river valley in that town, though many hundred feet above the level of the sea, is much lower than the surrounding country, being flanked by hills about 500 feet high. In the valley the peach cannot be cultivated, the trees having been completely killed to the ground in winter. But on one of the neighbouring hills, 500 feet above, and probably 1200 feet above the sea, an orchard has been planted on good soil, which entirely escapes, and yields regular crops of fruit. In the

north-eastern part of Pennsylvania, probably twelve or fifteen hundred feet above the level of the ocean, in the summer of 1835, after one of the severest winters for twenty years, the only two peach trees observed in travelling many miles, were full of peaches; while the same winter, in Stroudsburg valley, a large tree was noticed killed down to the ground. While those hills are often covered with snow throughout the winter, the valleys are subjected to thaws, and hence become more unfavourable to tender vegetation.

Most of these cases show the great advantages of elevated sites. A dry and firm soil is, however, quite important. The influence of a compact knoll, rising scarcely above the rest of the field, has saved the corn which grew upon it; while on the more mucky and spongy portions of the rest of the field, radiating heat more freely, the crop has been destroyed. A successful cultivator of drained swamps, told me he could never plant such lands with corn safely till two or three weeks after the usual time of planting in common soils on an equal level. These influences apply with greater force to tender trees. Succulence and lateness of growth, caused by such soils, are always unfavourable to the endurance of cold; while a hard, dry soil, at the same time that it produces a less rapid growth, causes also an earlier cessation, and the young wood becomes matured and hardened before severe frosts. "Many kinds of herbaceous plants and small shrubs," says A. J. Downing, "may be naturalized on *dry rock-work*, or aggregations of stones mingled with soil, where they are found to thrive perfectly. We observed in the Botanic Garden at Cambridge, an *Azalea indica* and a species of *Erica*, that had braved the exceedingly low temperature of 30 degrees below zero, the past winter, having been planted several years previously in a mass of rock work, where they had annually matured their wood in the most perfect manner." The successful cultivation of the peach and grape, on the gently swelling hills called *mounds*, in the western prairies, while the crops are destroyed by frost on other lands, more fertile, affords another example. In Lycoming county, Pa., on the banks of the Loyalsock, a creek so rapid that no muck is deposited, but fine dry soil, peaches have been raised, though the cold is often intense.

It will be observed that in the preceding remarks, the influence of *large bodies of unfreezing water*, in softening the severity of the cold, in chilling the dangerous warm air which starts the buds in winter, and which afford great protection by the screen of fog which they spread before the morning sun, has not been taken into account. This influence, where it exists, will in some cases, reverse some of the preceding rules.

J. J. Thomas.

Macedon, Third mo., 1847.

From the Maine Farmer.

Insects Injurious to Wheat.

Sir,—Being very desirous of obtaining the means for completing the history of some of the insects injurious to grain, and having seen several articles on this subject in the "New England Farmer," copied from the "Maine Farmer," I have taken the liberty of addressing you respecting them.

There are several different kinds of insects which are injurious to wheat; and agricultural writers are not commonly enough acquainted with natural history to distinguish and describe the kinds correctly. This is the source of the contradictory statements and unsatisfactory discussions that have appeared in the public prints respecting the history and ravages of these insects.

One of these insects is the Hessian fly, the grub of which confines its attacks to the stems of the wheat, near the ground.

Another is the wheat fly—*Cecidomyia Tritici*—which, in its first or young state, is an orange coloured maggot, *without legs*, and growing to the length of *one-tenth of an inch* only, and never suspending itself by a thread. It lives in the ears of the wheat.

A third is a "worm"—probably a kind of caterpillar—color variously described, growing to the length of *one quarter of an inch*, or more. It is found on the ears of the wheat, and it *devours* the substance of the grain. I have now some grains of wheat more than half eaten by an insect, said to be of this kind. This "worm," as it is generally called, has been compared to the "clover-worms," which are sometimes seen suspended by threads from the clover in the mow, and it has the same power of spinning threads and of suspending itself thereby. Permit me to refer you to my work on insects injurious to vegetation, pages 445 to 447, where has been collected a summary of the various accounts respecting this particular kind of wheat insect. It is possible that these accounts refer to more than one kind; but it is certain that they cannot, *if correct*, refer to the orange colored maggot of the wheat fly above mentioned. The great disparity in the size is sufficient to show that the insects are not the same; and the habit of suspending itself by a thread, peculiar to caterpillars, is not found in the true maggots of the Cecidomyia or wheat fly.

There are at least three other kinds of insects injurious to wheat in this country; but they are not likely to be mistaken for either of the foregoing, if ordinary care is taken in examining them. One is the wheat-moth, called in the Southern States the "flying weevil," and at the West the "white weevil." It is found both in the fields and in granaries and mills. The young are very small whitish wormlike caterpillars, which live singly within the grains, and devour the substance, leaving the hull whole and untouched, till they are about to come forth. The second is a somewhat larger caterpillar, found only in granaries and in stored grain. It fastens several grains together, and lives in these masses of clustered grains, upon the substance of the wheat; and it turns to a small moth or miller. The third is the "black-weevil of the Southern States, and is rarely found here. It is, when young, a small whitish grub, which lives within the grains of wheat, and turns to a little brown or blackish beetle. These three kinds are described in my work, pages 70, 363 and 365.

In the "Essays on the Grain Worm, No. 2" published in the Maine Farmer, Mr. L. Norcross, of Dixfield, states that some of the worms are *one-fourth of an inch in length.* He adds, that "two years ago I harvested my grain very damp, and it was heated in the mow. I threshed two bushels, and winnowed it in the wind; and after it had lain in the pile an hour, the top of the pile was alive with worms or caterpillars, about three-eighths of an inch in length, with a row of bristles sticking up along their backs and from their sides."

The orange coloured maggots of the wheat fly are found in Dixmont, Maine, and probably in many other parts of the State; but the wheat caterpillars are also found there, and five of them have been sent to me from Dixmont, where they are said to have been taken from the wheat, the grains of which had been much eaten by them. These caterpillars were from half an inch to five-eighths of an inch in length. They were of a light brown colour, with three longitudinal whitish lines on the back, and a broad white stripe on each side, just above the legs. The latter were sixteen in number, six before, two behind, and eight under the intermediate part of the body. They were in a languishing condition, and all perished without completing their transformations. Had they lived, they would have turned first to brownish chrysalides, and then to some kind of winged moths or millers. If any of these insects remain, it is probable they have already taken the chrysalis form, or are preparing for it, either by burrowing in the ground like canker-worms when they leave the trees, or by seeking a place of concealment above ground.

It will give me much pleasure to be put in communication with any persons who can provide me with a considerable number of these wheat worms with legs, or wheat caterpillars, or with the same after they have taken the chrysalis form. Gentlemen who are able and willing thus to favour me, are requested to make known their intentions by a letter addressed to me by mail.

Will you be pleased, sir, to bring this subject before the readers of your useful paper, in such a way as will best promote the object of my inquiries; by so doing you will greatly oblige,

Yours respectfully,

THADDEUS WILLIAM HARRIS.

Cambridge, Mass., November, 1846.

Mammoth Corn.

MR. EDITOR,—As corn is an article of the most extensive consumption amongst us—without which we could not well live; and for the special benefit of those of your readers, who doubt the advantage of a careful selection of their seed, I would beg leave to state a *fact* or two, and refer them to the *proof* at hand. From the specimens shown me, in its growing state, as well as when gathered, I must say, *emphatically*, it yields more for the industrious and energetic planter, than any grain of the kind I have seen or even dreamed of. On an exhausted plantation, near Monticello, on the red hills of Little River, in old worn-out Fairfield, Mr. J. R. D.—I trust he will excuse this liberty, in an old grey-headed man,—has succeeded this year in making corn, measuring from twelve to *thirteen* inches in *circumference*, and from twelve to *fourteen* inches in length, having forty to forty-eight rows of grains on the ear! This, however, is a yield of but one ear to the stalk—the ears from stalks bearing five or six ears or more, are, of course, smaller; though as many as three, generally, of the ears from those stalks, will *each* measure, when shelled, nearly twice as much as the largest ear of the common corn. It is mostly of the white gourd-seed corn. The question may naturally arise in the minds of many—whence did Mr. D. get this seed? I answer, that he *made* it by a careful and judicious selection from a variety of seed—the one is, I learn, remarkable only for a grain an inch deep, or a cob the *size of your finger*,—another, for its thickness of cob, but provokingly short—and the other for its length of cob, provok-

ingly slender, &c., &c.; either of which, being regarded in its single and separate capacity, would have been looked upon by most planters as hardly worth planting. I believe he obtained the most of these varieties when travelling through the Western Country some four years past; the crop from which has yielded him corn which he might well challenge any of the Western States from whence it came, and our own State, to beat. Thus it is, that Mr. D. has made a wonderful improvement in this great staff of life; and the more credit is due the public benefactor, on account of his age and limited experience. He is a man of untiring energy, good judgment, of an active, grasping and masterly mind, and of a high-toned spirit of independence, which, I sincerely hope, will soon gain him that reward which he so richly merits.—*Columbia Advocate.*

Agricultural Meeting at the State-house, Boston, April 6th.

Hon. Mr. Starkweather in the Chair. Subject "Profits of Farming."

Hon. Mr. Denny of Westborough, said the subject before the meeting was of vast importance, and prominent facts had been adduced, showing that the opinion prevailing in the minds of some that farming is unprofitable, is unfounded. It was not his object to detract from, or to underrate, other professions, nor to extol too highly the business of farming, but to lead the mind to the great truths that exist in relation to the subject. On one side it had been asserted that farming was not profitable, that a farmer could merely get a living, but no facts were brought forward to support these statements. On the other hand, we have numerous and well authenticated facts, showing that farming is profitable, and many become wealthy in this profession. The community may be divided into two great classes, the farmers form one, and all other professions the other. Farmers have as much wealth as others, and more happiness, better health, and greater longevity.

There are some failures and hardships among farmers, it is not all sunshine with them, but they have more sunshine and less storms than others. With the same capital, talent, and industry, farmers are the most successful. Farming is neglected, and too many young men are turning their attention to other pursuits. A mercantile house advertised for a clerk, and in the course of 24 hours it had 287 applications.

Mr. David Goodale, of Marlborough, said he was a farmer and the descendant of farmers. He said there were other profits in farming than dollars and cents. In his condition the prayer of Hagar is answered. He is blessed with a sufficiency and not troubled with a superabundance. The sleep of the labouring man is sweet. If his fare be coarse, he enjoys it with a good appetite. This is the most healthy, and a calling the most favourable to good morals. He is generally free from debts, and the vexatious visits of the sheriff. Farmers are a prudent class; they will wear an old coat rather than run into debt for a new one. They do not count their chickens before they are hatched, nor like the Southern planters, spend the proceeds of their crops before they are raised. Although farming afforded great advantages, he did not think it generally produced so large a per centage as some had stated. Large stories had been told, and they might be true, but they were unusual cases. He would name one of the kind. An apple tree produced in one season 22 barrels of fruit, that was sold at $2 50 per barrel.

Hon. Mr. Clark, of Walpole, read a statistical document made up from replies to a circular sent to every town in the State, with inquiries in relation to failures. Returns were made from 186 towns, containing a population of 240,000. The failures were 357, only 59 of which were farmers, and we know not how many of these failed from indolence, intemperance, speculation, or by attending to some other business.

Mr. William Parker, of Boston, said that it might be said that he had at a previous meeting told a great story as to the profits of farming, but it was true. He thought any man who paid strict attention to the business could make it profitable. In relation to the great profit from one apple tree, as had been named, that could be extended, but many neglected the business. He knew a farmer in Middlesex, who would not set out apple trees, as he would not live to enjoy the products. His son followed him with the same views, but the grandson set an orchard, and all three lived to drink cider from the orchard.

Mr. Brooks, of Princeton, said that he had seen nothing to shake his belief that a good farmer can make ten or fifteen per cent. profit on his capital, and attend to the common business of farming, such as raising corn and other grains, potatoes, hay, and stock. In regard to the remarks of Mr. Everett, who said the other evening that farming in Worcester county would not pay more than 4½ per cent. on the capital, he (Mr. E.) has a brother in that county, that informed him that he gained $200 a year. Another farmer in Worcester, who at first thought that

his (Mr. B.'s) statement was wrong, said after making an estimate, that he had made 14½ per cent. on his capital for eleven years past.

Mr. Buckminster, of the Ploughman, said that generally farms could not be leased so as to pay more than five per cent. This was a fair way of showing the profit, and this was enough. It was better than larger profits, for if a large percentage could be made, capitalists would buy up all the land, and those who were farmers, would become labourers under them, as is the case in Europe, where land cannot be bought. It is well for us that very great profits cannot be made, as that would destroy the happy equality that now exists. Farmers do not work hard generally. He had inquired, and in some sections they do not work more than half their time. Many having farms worth three to five thousand dollars, work only about half their time. He said that one reason that farmers made no more profit is because they are so slow to adopt improvements. A horse rake may be bought for four dollars, with which a man and boy, or with a steady horse, a man can rake an acre in half an hour. Farmers live better than any other class.

Mr. Calhoun said that we were about closing this subject, and we should come to some conclusion. From the numerous facts brought forward showing the profits of farming, we must come to the conclusion that farming is more profitable than any other profession. Farmers who attend to their business succeed well. The exceptions are rare.

A stranger remarked that he thought that take farming all over New England, it was not generally considered profitable.

Mr. French, of Braintree, said that statements had been rather vague, and it was difficult to make correct estimates of farming by single crops, or one year's production. We want something more tangible. He said that farmers in his neighbourhood who commenced with very little, had been diligent at home, constantly attending to their business, and they had accumulated estates; a number to the amount of $10,000 or $15,000. If a farmer saves only a shilling a day, it will amount to a competency in the course of a number of years.—*Boston Cultivator.*

The Ass and the Mule.

Jacks have sold in Kentucky as high as $5000. Their value at this time, April, 1842, is nominal—16 hands is the largest size—15 is quite common—mules of 17 hands are sometimes to be met with. The quality of the mule *is improved by the blood of the mare.* It is quite common to work mares while going to the Jack, while in foal, and while suckling. Mules should be weaned at about five months old—we feed our mules on grain, corn, oats, or rye, the latter in the form of chop, from season to season until sold. I mean during the winter, our blue grass being all-sufficient during the rest of the year. It is necessary, however, to grain feed them on the grass through the summer they are fattened for market—we sell the majority of our stock the fall after they are two—mostly to the cotton planters—a few of late to the Pennsylvania iron works, and a few to Cuba; the remainder we sell at a year older. The present prices at a given age are as variant as that of horses, cattle, or any thing else whose value depends upon its quality, and the demands and monetary condition of the country—sales were effected last fall at $35 to $125. I have known mules sell at weaning time for $150, and when grown, as high as $300. They should be broke at the age you would break a horse; and, according to my observation, by the same system. They eat as much as horses, and reward a liberal allowance as well, though he may, when unavoidable, be able to withstand privation better. I have known mules to travel ten miles within the hour in light harness. I drove a pair from Lexington to the Blue Lick in six hours, stopping one hour by the way—the distance is forty miles. What may be the precise difference in "the age of the mule as compared with the horse, under the same treatment, on a plantation," I cannot say; the advantage, however, would be on the side of the former—I know of no particular inconvenience in using them in a carriage.

The *mule trade* in Kentucky is of about forty years' standing. For the first twenty years the number increased gradually, to about eight hundred; during the next fifteen or sixteen years, it went up to four or five thousand; since when, it has gone back to where it was twenty years ago. Our farmers who breed mules, prefer to sell them when they put their mares to the Jack, or at weaning time. The price rose gradually from twenty to fifty dollars for colts. My last lot cost me in 1838, fifty dollars, and the season of my Jack given in. The mares were selected, and the colts bargained for in the season of 1837. When the price went down with everything else a few years back, they discontinued, in a great degree, the breeding of them; so that our present prices result from a greatly insufficient supply for the ordinary demand. I sold my stock of

three year olds,—seventy-three head—last fall at $70. I was anxious to retain two or three pair—not the largest—at $250 a pair, but the purchaser objected—but he was equally anxious to select for me some twenty head—and not the least—at thirty-five dollars. I declined taking them. The number of mules annually exported from Kentucky, may be set down at the whole number raised—as the small number broke to service in this State, are sure, at least, to find their way to a foreign market—at a rough guess, I would fix the nett average value, in market, of our mules, at about $70.

The reason why mules have been raised in such numbers in Kentucky more than in other States, is the better adaptation of our soil and climate to the production of grain and grass than any other State, and for which we can obtain a market only in the form of live stock. The "cost of raising a mule to be three years old, when corn is twenty-five cents per bushel," charging from the usual time of weaning, 25th of September, may be computed at about thirty dollars, including a fair equivalent for grazing and salting. I have not known of a case of a female mule breeding.—*Youatt on the Horse.*

Philadelphia Hay Market.

We are indebted to the politeness of Mr. H. Whitton, Superintendent of the Farmers' Hay and Straw Market, for the subjoined statement of the receipts of hay at that establishment, during the two years ending 30th of September, inclusive:

		1845–46.	1844–45.
October,	*Loads,*	1,045	1,080
November,		1,000	1,075
December,		1,275	1,215
January,		1,225	1,170
February,		1,112	1,135
March,		1,300	1,185
April,		1,250	1,305
May,		1,104	1,075
June,		1,045	815
July,		850	885
August,		1,140	820
September,		1,235	980
Total,		13,571	12,740
Equal in tons, to		12,225	11,461

The incoming crop of hay is likely to prove abundant, and of good quality. The receipts at the other yards in Philadelphia are inconsiderable—scarcely reaching 3000 loads per annum—but considerable supplies of pressed hay come forward for the river counties, and elsewhere, for shipment.

Prices continue steady, and we quote the range at 70 to 80 cents for good Timothy, and 60 to 70 cents for Clover and Timothy mixed. Rye straw is worth six to seven cents.—*Pa. Enquirer, Oct.*, 1847.

Cottage Culture of Tea in China.—The green-tree shrub is cultivated in some parts rather extensively, but, if we except a small quantity of tea which is annually sent over to Ningpo and the adjoining towns on the mainland, the whole of the produce is used by the natives themselves. Every small farmer and cottager has a few plants on his own premises, which he rears with considerable care, but seems to have no wish to enter on its cultivation on a larger scale for exportation. Indeed, it is questionable if it would pay, as the soil is scarcely rich enough, and although the shrub grows pretty well, it is far from being so luxuriant as it is in the larger tea districts of the mainland, which I afterwards visited.—*Fortune's Narrative.*

Keeping House.—A young married woman, who has not had the opportunity of profiting by the advice and example of a good mother, will find some difficulty at first in spending her money to the best advantage; for there is really an art in *spending* money, though not in *getting rid* of it. Some women will keep house respectably and plentifully on one-third less money than will be required by others, and without either meanness or illiberal dealing. But, to do this, judgment, forethought, and experience are necessary. One woman shall be able to tell you how much her housekeeping costs to a shilling, while another cannot even guess within ten. The former has method, rule, regularity, and a certain sum assigned to her; with the latter it is all hap-hazard, it comes and it goes, she neither knows how nor cares. And this is almost sure to be the case if the money is doled out by her husband in a few shillings at a time.—*Exchange paper.*

Cement for Grafting.—One part of good beef's tallow, two parts of pure bees-wax, and four parts of rosin. Melt all and mix well; then pour into cold water and work very thoroughly, as shoemaker's wax. We have frequently used cement made with these proportions, and it will not melt in hot weather, nor crack in cold weather.—*Exchange paper.*

Transplanting Trees.

We have at various times suggested to our readers the importance of the cultivation of fruit. We have also not been backward in hinting that a tree of good fruit occupied no more space in an orchard or a garden, than a worthless one. We now take the opportunity to say, that to select good fruit trees from the nursery, is not all that is essential. Careful planting is of great importance, as will appear from the following remarks taken from *Downing's* excellent work on the *Fruits* and *Fruit Trees of America*, a work which comes at $1 50, which we have constantly for sale, and which, we think, every farmer will gain by possessing himself of. It contains abundance of valuable practical information. And further—there is a great deal to do after an orchard is planted: we mean in taking care to protect it from the cattle, sheep, and hogs. The editor remembers once hearing a nurseryman remark, that he believed nearly one half the trees sold and planted were destroyed by the cattle, &c., and in other ways, for want of care. Why should this be? Surely a tree that is worth buying, and the labour of planting, is worth subsequent protection.—Ed.

As nearly all fruit trees are raised first in nurseries, and then removed to their final position in the orchard or fruit garden; as upon the manner of this removal depends not only their slow or rapid growth, their feebleness or vigor afterwards, and in many cases even their life, it is evident that it is in the highest degree important to understand and practise well this *transplanting*.

The season best adapted for transplanting fruit trees is a matter open to much difference of opinion among horticulturists; a difference founded mainly on experience, but without taking into account variation of climate and soils, two very important circumstances in all operations of this kind.

All physiologists, however, agree that the best season for transplanting deciduous trees is in autumn, directly after the fall of the leaf. The tree is then in a completely dormant state. Transplanted at this early season, whatever wounds may have been made in the roots commence healing at once, as a deposit directly takes place of granulous matter from the wound, and when the spring arrives the tree is already somewhat established, and ready to commence its growth. Autumn planting is for this reason greatly to be preferred in all mild climates and dry soils; and even for very hardy trees as the apple, in colder latitudes; as the fixed position in the ground, which trees planted then get by the autumnal and early spring rains, gives them an advantage, at the next season of growth, over newly moved trees.

On the other hand, in the northern portions of the Union, where the winters commence early, and are severe, spring planting is greatly preferred. There autumn and winter are not mild enough to allow this gradual process of healing and establishing the roots to go on; for when the ground is frozen to the depth of the roots of a tree, all that slow growth and collection of nutriment by the roots is necessarily at an end. And the more tender sorts of fruit trees, the Peach and Apricot, which are less hardy when newly planted than when their roots are entire, and well fixed in the soil, are liable to injury in their branches by the cold. The proper time in such a climate, is as early as the ground is in a fit condition in the spring.

Early in autumn, and in spring before the buds expand, may as a general rule, be considered the best seasons for transplanting. It is true that there are instances of excellent success in planting at all seasons, except midsummer; and there are many who, from having been once or twice successful in transplanting when trees were nearly in leaf, avow that to be the best season; not taking into account, that their success was probably entirely owing to a fortunately damp state of the atmosphere at the time, and abundant rains after the experiment was performed. In the middle States, we are frequently liable to a dry period in early summer, directly following the season of removal, and if transplanting is deferred to a late period in spring, many of the trees will perish from drought, before their roots become established in the soil. Spring planting should, therefore, always be performed as soon as possible, that the roots may have the great benefit of the early and abundant rains of that season, and get well started before the heat of summer commences. For the neighbourhood of New York, therefore, the best periods are, from the fall of the leaf to the middle of November, in autumn; and from the close of winter to the middle of April, in the spring; though commonly, the seasons of removal are frequently extended a month beyond these limits.

Taking up the trees is an important part of the operation. A transplanter should never forget that it is by the delicate and tender points or extremities of the root that trees take up their food; and that the chance of complete success is lessened, by every one of these points that is bruised or destroyed. If we could remove trees with every fibre entire, as we do a plant in a pot, they would scarcely show any sign of their change of position. In most cases, especially in that of trees taken from nurseries, this is, by the operation of removal, nearly impossible. But although we may not hope to get every root entire, we may, with proper care, preserve by far the larger portion of them, and more

particularly the small and delicate fibres. After being taken up, they should be planted directly; or, if this cannot be done, they should be kept from drying by a covering of mats, and when sent to a distance by being packed in damp moss.*

Preparing the places. Here is the fatal stumbling block of all novices and ignorant persons in transplanting. An English gardener, when he is about to plant fruit trees, talks about *preparing his borders*, an American says he will *dig his holes;* and we cannot give a more forcible illustration of the ideas of two persons as to the wants of a fruit tree, or a better notion of the comparative provision made to supply these wants, than by contrasting the two phrases themselves. The one looks upon a tree as a living being, whose life is to be rendered long, vigorous, and fruitful, by a good supply of food, and a soil mellow and easily penetrated by the smallest fibre; the other considers it very much in the light of a truncheon or a post, which he thrusts into the smallest possible hole, and supplies with the least portion of manure, trusting to what he seems to believe the inextinguishable powers of nature to make roots and branches under any circumstances. It is true that the terms differ somewhat from the nature of the culture and the greater preparation necessary in planting fruit trees in England, but this is not by any means sufficient to justify the different modes of performing the same operation there and here.

In truth, in this country, where the sun and climate are so favourable, where pruning and training are comparatively so little necessary, the great requisite to success in the ordinary culture of fruit trees is the *proper preparation of the soil* before a tree is planted. Whether a transplanted tree shall struggle several years to recover, or grow moderately after a short time, or at once start into a very luxuriant and vigorous growth, depends entirely upon the amount of care and labour the planter is willing to bestow on the soil for his trees. We have seen several instances where, side by side, one man planted his trees in large spaces of deeply moved and rich soil, and another in small holes in the common mode, which uniformly showed the trees of the first, larger after five years, than those of the last, after twelve.

No fruit tree should be planted in a hole of less size than three feet square, and eighteen inches to two feet deep. To this size and depth the soil should be removed and well pulverized, and it should, if necessary, be properly enriched by the application of manure, which must be thoroughly mixed with the whole mass of prepared soil by repeated turnings with the spade. This preparation will answer, but the most skilful cultivators among us make their spaces four or five feet in diameter, or three times the size of the roots, and it is incredible how much the luxuriance and vigor of growth, even in a poor soil, are promoted by this. No after mending of the soil, or top dressings applied to the surface, can, in a climate of dry summers like ours, equal the effects of this early and deep loosening and enriching the soil. Its effects on the growth and health of the tree are permanent, and the little expense and care necessary in this preparation is a source of early and constant pleasure to the planter. This preparation may be made just before the tree is planted, but in heavy soils, it is much better to do it several months previously; and no shallow ploughing of the soil can obviate the necessity and advantages of the practice, where healthy, vigorous orchards or fruit gardens are desired.

The whole art of transplanting, after this, consists in placing the roots as they were before, or in the most favourable position for growth. Begin by filling the hole with the prepared soil, within as many inches of the top as will allow the tree to stand exactly as deep as it previously stood. With the spade, shape this soil for the roots in the form of a little hillock on which to place the roots—and not, as is commonly done, in the form of a hollow; the roots will then extend in their natural position, not being forced to turn up at the ends. Next examine the roots, and cut off all wounded parts, paring the wound smooth. Hold the tree upright on its little mound in the hole of prepared soil; extend the roots and cover them carefully with the remaining pulverized soil. As much of the success of transplanting depends on bringing the soil in contact with every fibre, so as to leave no hollows to cause the decay of the roots, not only must this be secured by patiently filling-in all cavities among the roots, but when the trees are not quite small, it is customary to pour in a pail of water when the roots are nearly all covered with soil. This carries the liquid mould to every hidden part. After the water has settled away, fill up the hole, pressing the earth

* We should notice an important exception to this in the case of trees packed for shipping across the Atlantic. In this case they should be packed only in *dry* moss; the moisture of the sea air being sufficient to keep the roots in good condition, while if packed in damp moss, they will be injured by rotting or excessive growth.

gently about the tree with the foot, but avoiding the common practice of shaking it up and down by the stem. In windy situations it will be necessary to place a stake by the side of each tree to hold it upright, until it shall have taken firm root in the soil, but it is not needful in ordinary cases.

Avoid deep planting. More than half the losses in orchard planting in America arise from this cause, and the equally common one of crowding the earth too tightly about the roots. No tree should be planted deeper than it formerly grew, as its roots are stifled from the want of air, or starved by the poverty of the soil at the depth where they are placed. It is much the better and more natural process in fact, to plant the tree so that it shall, when the whole is complete, appear just as deep as before, but standing on a little mound two or three inches higher than the level of the ground about. This, when the mound settles, will leave it nearly on the level with the previous surface.

Mulching is an excellent practice with transplanted trees, and more especially for those which are removed late in the spring. Mulching is nothing more than covering the ground about the stems with coarse straw, or litter from the barn-yard, which by preventing evaporation, keeps the soil from becoming dry, and maintains it in that moist and equable condition of temperature most favourable to the growth of young roots. Very many trees, in a dry season, fail at midsummer, after having made a fine start, from the parched and variable condition of the earth about the roots. Watering, frequently fails to save such trees, but mulching when they are planted, will entirely obviate the necessity of watering in dry seasons, and promote growth under any circumstances. Indeed, watering upon the surface, as commonly performed, is a most injurious practice, as the roots stimulated at one period of the day by water, are only rendered more susceptible to the action of the hot sun at another, and the surface of the ground becomes so hard, by repeated watering, that the beneficial access of the air is almost cut off. If trees are well watered in the holes, while transplanting is going on, they will rarely need it again, and we may say *never*, if they are well mulched directly after planting.

The best manure to be used in preparing the soil for transplanting trees, is a compost formed of two-thirds muck or black peat earth, reduced by fermenting it several months in a heap with one-third fresh barn-yard manure. Almost every farm will supply this, and it is more permanent in its effects, and less drying in its nature, than the common manure of the stable. An admirable manure, recently applied with great success, is charcoal—the small broken bits and refuse of the charcoal pits—mixed intimately with the soil. Air-slaked lime is an excellent manure for fruit trees, in soils that are not naturally calcareous. Two or three handfuls may be mixed with the soil when preparing each space for planting, and a top dressing may be applied with advantage occasionally afterwards, to increase their productiveness. But wherever large orchards or fruit gardens are to be planted, the muck compost heap should be made ready beforehand, as it is the cheapest, most valuable, and durable of all manures for fruit trees.

Pruning the heads of transplanted trees, at the season of removal, we think generally an injurious practice. It is certainly needless and hurtful in the case of small trees, or those of such a size as will allow the roots to be taken up nearly entire; for, as the action of the branches and the roots is precisely reciprocal, and as new roots are rapidly formed just in proportion to the healthy action of the leaves, it follows that by needlessly cutting off branches we lessen the vital action of the whole tree. At the same time, where trees are transplanted of so large a size that some of the roots are lost in removing them, it is necessary to cut back or shorten a few of the branches—as many as will restore the balance of the system—otherwise the perspiration of the leaves may be so great, as to exhaust the supply of sap faster than the roots can collect it. A little judgment only is necessary, to see at a glance, how much of the top must be pruned away before planting the tree, to equalize the loss between the branches and the roots.

When it is necessary to transplant fruit trees of large size, the best practice is to prepare them previously by digging a trench round the whole mass of roots, undermining them, and cutting off all roots projecting beyond this line. The trench should be dug at such a distance from the tree as will include all the large and sufficient ball of roots, and it should be done in the spring, or before midsummer, when it is desirable to remove the tree the next year. After all the roots that extend to this circular trench are cut off, the earth is replaced, and by the season following an abundance of small fibres is sent out by the amputated roots, which, when the whole is now removed, will insure the success and speedy growth of the tree. This is more completely the case when the tree is prepared two years before transplanting. A variation of this mode, which has been found quite as successful and less labo-

rious, consists in leaving the trench open, and covering it with boards only, or boards with a top layer of turf. The tree then is somewhat checked in its growth, it throws out an abundance of small fibres into the ball of earth containing the roots, and is the next season transplanted with great ease and safety.

The proper size for transplanting varies somewhat with the sort of tree and the kind of culture intended. It is, however, a maxim equally well settled, both among theorists and the best practical men, that health, immediate vigor, and duration, are all greatly promoted by transplanting fruit trees of small size—from three to six or seven feet. We are fully aware with what impatience the beginner, or a person who knows little of the culture of trees, looks upon trees of this size—one who is eager to plant an orchard, and stock a garden with large trees, thinking to *gather a crop the next year.* The latter may indeed be done, but the transplanting so affects the tree, that its first scanty crop is followed by a long season of rest and feeble growth, while the plantation of young trees is making wood rapidly, and soon comes into a healthy and long-continued state of productiveness—often long indeed before the large trees have fairly arrived at that condition. The small tree, transplanted with its system of roots and branches entire, suffers little or no check; the older and larger tree, losing part of its roots, requires several years to resume its former vigor. The constitution of the small tree is healthy and unimpaired; that of the large is frequently much enfeebled. A stout and vigorous habit—what the nurserymen call a *good stocky plant*—is the true criterion of merit in selecting fruit trees for transplanting.

Trees intended for orchards, being often more exposed than those in gardens, should be somewhat larger—not less than six, or more than eight feet is the best size. For gardens, all experienced cultivators agree that a smaller size is preferable; we prefer plants two years old from the graft. Most gardeners abroad, when they select trees with more than usual care, take what are called maiden plants—those one year old from the graft, and there can be no doubt that, taking into account health, duration, and the ease with which such a tree can be made to grow into any form, this is truly the preferable size for removal into a fruit garden. But we are an impatient people, and it is not till after another century of trial and experience in the culture of fruit trees, that cultivators generally in this country will become aware of the truth of this fact.

The facility with which the different fruit trees may be transplanted differs considerably. Plums are generally removed with most success, and after them nearly in the order as follows: quinces, apples, pears, peaches, nectarines, apricots, and cherries; the latter succeeding with some difficulty when of large size.

In planting an orchard, always avoid placing the trees in the same spot or near where an old tree stood before. Experience has taught us that the growth of a young tree, in such a position, is weak and feeble; the nourishment suitable to that kind of tree having already been exhausted by a previous growth, and the soil being half filled with old and decayed roots, which are detrimental to the health of the young tree.

Too much Work.

People do not have relaxation enough in New England. They too generally have a care-worn expression, from infancy to age; and the fact cannot be denied, that anxiety is weariness to the flesh. We are all utilitarians in this country, especially in the Northern States, hardly affording ourselves opportunity for eating or sleeping, in the manner which nature demands—for she can only conduct her chemical operations properly, and re-adjust the deranged vital machinery, while we are quietly slumbering. We recruit ourselves and grow fat during a refreshing nap—but exhaust the system, both physically and mentally, in pursuing to excess the ordinary round of every-day business. "All work and no play, make Jack a dull boy," is a proverb based on a profound knowledge of the laws of our being.

Females in New England, are worse off than the other sex in the deprivation of out-of-door relaxation, as custom has made it vulgar to breathe the fresh air, unless it is done in a very lady-like manner. Hence they make feeble mothers—look thin, sallow, lank, and die prematurely, of diseases that never would have been developed had there been less education of the mind, and more of the body, in girlhood.

A sad mistake is produced by a too implicit belief in the adage that "time is money," since the first object of pursuit is in consequence, made to be cash. Those who attempt to rest reasonably from their labours, at proper periods, are either afraid of not having enough, or are perpetually reminded that idleness ends in want. So the shuttle flies faster than it ought to go; the farmer cheats himself out of all that is worth having, health, by denying himself and his boys a holiday, because time is money and exam-

ple is everything. We work too much and too long in New England. Not farmers only, but mechanics also.—*Medical Journal.*

The British Grain Crops.

A WRITER in the London Times has compiled the following estimate of deficiency in the grain crops of Great Britain, for the year ending Sept. 1st, 1847:

	Quarters.
Ordinary annual deficiency,	2,000,000
Loss of potatoes in Ireland, value £12,000,000, to be supplied by grain—a food of double the cost of potatoes—value £24,000,000, respresenting, at 50s. per quarter,	9,800,000
Loss of oats in Ireland stated by Mr. Labouchre to be one-third the crop, or	5,227,000
Loss of potatoes in England and Scotland, say one-tenth only the loss in Ireland, or	1,000,000
Loss of oats in Scotland and England,	1,000,000
Loss of barley in the United Kingdom,	1,000,000
Extra seed for increased cultivation of grain,	300,000
Extra consumption of railway labourers,	300,000
	20,627,000
Deduct economies made by starvation and non-feeding of pigs,	4,627,000
Total deficiency,	16,000,000

Money value of the deficiency at £3 per quarter, £48,000,000, or more than $200,000,000.

INCOMBUSTIBLE WASH.—Slack stone lime in a large tub or barrel, with boiling water, covering the tub or barrel, to keep in all the steam. When thus slacked, pass six quarts of it through a fine sieve. It will then be in a state of fine flour. Now, to six quarts of this lime, add one quart of rock or Turk's Island salt, and one gallon of water, then boil the mixture and skim it clean. To every five gallons of this skimmed mixture, add one pound of alum, half pound of copperas, by slow degrees add three-fourths of a pound of potash, and four quarts of fine sand or hickory ashes sifted. We suppose any kind of good hard wood ashes will answer as well as hickory. This mixture will now admit of any colouring matter you please, and may be applied with a brush. It looks better than paint, and is as durable as slate. It will stop small leaks in the roof, prevent the moss from growing over and rotting the wood, and render it incombustible from sparks falling upon it. When laid upon brick work it renders the brick impervious to rain or wet.—*Farmers' Register.*

From the Pennsylvania Enquirer.

Measurement of Grain, &c.

WE are indebted to Mr. E. Street, for the annexed statement of the amount of grain, &c., measured at Philadelphia during the first quarter of 1847—to which we have added the amount measured during the same period of the year 1846.

The number of bushels of grain, salt, and coal, measured—that came under my notice—for the first quarter of the year 1847:

	1847.	1846.
Corn,	338,297	62,512
Wheat,	57,795	11,758
Rye,	3,777	2,360
Beans,	70	1,014
Oats,	63,935	8,557
Barley,	4,538	58
Seeds,	1,910	2,843
Salt,	10,500	
Coal,	5,835	

EML. STREET,
Head Measurer of the Port of Philadelphia.

Hybrid China Roses.

Rosa Indica hybridæ.—The superior varieties of this fine division give a combination of all that is or can be beautiful in roses; for, not only are their flowers of the most elegant forms and colours, their foliage of extreme luxuriance, but their branches are so vigorous and graceful, that perhaps no plant presents such a mass of beauty as a finely grown hybrid China rose in full bloom. They owe their origin to the China, Tea-scented, Noisette, and Bourbon roses, fertilized with the French, Provence, and other summer roses, and also to the latter crossed with the former; the seeds of such impregnated flowers producing Hybrid China roses. These have, in many cases, resulted from accident, but latterly from the regular fertilizing process, as mules or hybrids have been raised from well known parents.

In England, but a few varieties have been originated; as the common China rose does not in general ripen its seeds sufficiently for germination. The parents of Brown's Superb Blush, which is an English hybrid, was the old Tea-scented rose, *Rosa indica odorata*, impregnated with some hardy summer rose. River's George the Fourth is also an English rose: but as this came by accident,

its origin is not so well ascertained. ***Rosa Blairii*** is also English, and raised from the Yellow China, impregnated with some variety of hardy rose. All these roses have the true characters of the family: leaves smooth, glossy, and sub-evergreen: branches long, luxuriant, and flexible. They give a long continuance of bloom, but they never put forth secondary or autumnal flowers, except in a few insulated cases. This is a most peculiarly distinguishing trait, and an interesting fact. Impregnate a Bourbon, China, or Noisette rose,—all abundant autumnal bloomers, with the farina of a French or a Provence rose, and you entirely take away the tendency to autumnal blooming in the offspring. They will *grow* vigorously all the autumn, and give a *long*, but not a *secondary* series of flowers. Some of these Hybrid China roses produce seed abundantly, which is rather a remarkable feature, as so few hybrid plants are fertile. It has been asserted that hybrids produced from the French rose, impregnated with the China rose, are not of such robust and vigorous habits as when the China rose is the female parent; but this is an assertion scarcely borne out by facts, for the exceptions are numerous, and like many other variations in roses and plants in general, they seem to bid defiance to systematic rules. By scientific cultivators the roses of this division have been divided into four classes, Hybrid China, Hybrid Noisette, Hybrid Bourbon, and Uncertain Hybrids.

Those that have been raised from Noisette roses have a tendency to produce their flowers in clusters; those from Bourbon roses have their leaves thick, leathery, and round; those from the Tea-scented have a delicate and grateful scent; but all have those distinguishing family traits as before given, and accordingly they group beautifully. It is a difficult task to point out the best in each of these divisions, as they are nearly all well deserving of cultivation. However, by making a few remarks, such as cannot so well be given in a descriptive catalogue, I may perhaps be able in some measure, to direct the choice of amateurs to those worthy their notice.—*Prince's Manual of Roses.*

Address,

Delivered by J. S. Skinner, *Editor of the Farmers' Library, at Northampton, Mass., in the Tenth month last, at the request of the Franklin and Hampden Agricultural Societies.*

We publish with pleasure the following extract, and commend it to the attention of those who may be immediately interested, and who have influence to give a tone to public feeling. We know very well that when scientific instruction is spoken of, in reference to the lad who is to earn his livelihood on a farm, we are too generally told, that an efficient education can only be attained by taking off his coat and going directly to the plough, and to every other exercise of the plantation. The truth of this in part, must be admitted. We are aware that a man will not be likely to farm profitably, whose only qualification is sound theory; he must have practical knowledge:—yet all this is consistent with an education—a training especially adapted to his future calling. This is what is aimed at by our indefatigable and worthy friend of the *Farmers' Library*. James Gowen's proposed College—see page 243, current vol. of Cabinet—will, to a certain extent, supply a serious vacancy, but the idea suggested below, is to open avenues for agricultural instruction in every direction, and to all classes.—Ed.

EXTRACT.

My friends, if you will allow me to speak frankly and without reserve, as becomes a friend, who has devoted the best years of his life in the study of how he could best assert the rights and elevate the cause of American agriculture, I will tell you in what I think consists the great impediment to the progress of your profession; and by that I mean the obstacle which stands in the way of your practically realizing double your present crops from the same land, and with less labour. It lies in a deficient and ill digested system of education! I mean in the general way, that too many farmers are content with an education, or what is called an education, that confers merely the power of *reading, writing, and cyphering*—without reflecting that these of themselves do not constitute learning or information in the science of farming, or any other science, any more than the possession of a square and compass, a drawing-knife and a jack plane, gives a knowledge of house-building. Reading, writing, and arithmetic, are nothing more than the tools to work with! You might as well expect a man to cure, without any knowledge of the healing art, the most deadly malady, by putting the whole contents of an apothecary's shop into his hands, as your son to profit in the art of farming merely by a knowledge of reading, writing, and arithmetic.

Will a knowledge of these of themselves, instruct your son in the nature of the soil out of which he is to get his living—its composition or mechanical or chemical properties? Does this knowledge, of itself, and without using it as the means of extending his researches, let him into a knowledge of the properties of vegetables—of what they are composed, by what they are nourished, and the laws of their organization and existence? In which of the schools, let me ask

you, are your sons, who are going to follow your pursuit, educated in the knowledge of the nutritive properties of the various kinds of food, and their positive or comparative effect on the animal constitution, and the circumstances and conditions on which depend their growth and their health, either of the beasts themselves or the plants on which they live? Why the pursuit in which you propose your sons to embark, is in its very nature an art as well as a science. The farm is in fact a great manufactory; the basis of the machinery is the land, requiring to be repaired, and oiled, and kept in order, with seed, and manure, and air, and water, and the various elements that earth and air contain, with labourers for operatives, and all to be directed with more or less effect, according to the experience and skill of the *watchful and accomplished superintendent over all.* The difference between it and other great chemical, or other complicated machinery and laboratories is, that some turn out soap, some oil, some glass, some linen or woollen cloth, some nauseous drugs, while yours turns out the staff of life, without which all others would starve. In behalf, then, of your own sons, I appeal to you if it be fair in those who can afford it, to withhold, at least from such of them as are to live by this most beneficial of all arts, a knowledge of the chemical elements to be found in the soil, in the air, in the water, and in the animal and vegetable and mineral kingdoms, with all which they have every day to deal? If it be easy to find, even in time of profound peace, for the last quarter of a century, some fifteen millions annually, for the warlike use and machinery of this Republican Government, cannot one million, at least, be found for the construction, at the seats of all the State Governments,—or as an appendage to the Smithsonian Institute at Washington—of laboratories where practical instruction might be given to men who, after a few years, might go forth into every county in every State of this Union, and teach practically to the rising generation of farmers the various methods of analyzing minerals, and manures, and soils, and the methods of detecting the materials taken from the soils by the removal of the crops. Are you aware of what is doing in our mother country on this subject—that country from which we have derived our knowledge of the principles of liberty and our advancement in the arts—that country whose wonderful progress in agriculture and manufactures is based on her proficiency in the sciences I have been so feebly recommending to be taught in all our schools? Why, such has been of late years the movement made in sciences connected with and contributory to the progress of agriculture, that Professor Johnston, the great agricultural chemist, in a recent lecture, refers to a particular field of 100 acres of land which had, to use his own language, by *application of an improved system of farming and the proper application of manures*, been brought in twelve years from an average product of 50 bushels of oats up to 85 bushels per acre; and in Norfolk, England, according to one of those masterly prize essays elicited lately by the wise measures of the Royal Agricultural Society, and which are transferred to the Farmers' Library, a large district of fen or boggy land, has been recently so immensely improved, that some parts which not many years ago were considered worth not more than $35 an acre, have been sold within the last five years at $225; while others which, says the author of this elaborate essay on Norfolk agriculture, were offered for a gallon of beer, have sold for nearly $200 an acre.

Again, then, I repeat, you must overhaul and amend your systems of education. Why should they remain stationary, while everything around is advancing with railroad velocity? Let us worship knowledge as we now worship power, until knowledge and power become truly, as they ought to be, synonymous. Pay to benefactors of industrial pursuits the court you now pay to party demagogues; exalt inventors in the useful arts as you now exalt small men into high places; pay and glorify thorough-bred scientific instructors as you now pay and glorify the military, and you will see the whole mass of agricultural population rising from the ground with increased vigor of intellect, as the languishing fields revive after a genial shower, and with an understanding of their rights, which will impart a strength to maintain them beyond the strength of ten thousand armies, and with a capacity to prosecute their business and augment the products of the earth as much above the mere efficacy of strong arms or brute force, as mind is above matter, and all other powers short of the powers of the Supreme Being. But remember the species of education, the sort of embellishment which is now needed to keep your interests and pursuits in a line with the advancement of every class and every interest around you, does not consist—and I cannot too often repeat it—in learning merely to *read, write, and cypher*, justly as all New England has a right to boast of imparting that to all her children, but with which it is apprehended they are too generally contented. These are to be valued only as a means to an end—as step-

ping-stones to knowledge—to be prized for what they are worth, but not to be confounded with knowledge itself. Oh, that I could prevail upon the farmers of the United States, on patriots of all parties, to unite and lay their heads together and their shoulders to the wheel on this great subject of agricultural education, as with all my heart I have been labouring thirty years to do, and am now doing, with more earnestness and more hope than ever, through the pages of The Farmers' Library! a work in which the publishers give me full swing, and place at my command the best materials that money can procure, or art illustrate in any country—a work which, with such materials and a passion for the subject, I may venture to say as the friend of agriculture, not of yesterday or to-day, but of my whole life time, and without fearing the imputation of selfish or mercenary motives, *ought to be placed in the hands of every American landholder, and more especially in the hands of every youth whose destiny is to live by the cultivation of the earth.*

Were it possible to command for this subject of agricultural education, half the time and attention which are given to party politics, were it possible to compel an appropriation to it of one-tenth that is expended for commercial and warlike purposes, who dare say what would be the benefits resulting to the great interests of the country and of mankind, even in the lifetime of some who hear me? Remember, you who have power to control public sentiment and direct it in the right way, that as you value the character of your sons and the existence of your government, you must enlighten the mass of agriculturists. In a few years we shall have fifty millions of people. Few are aware of the geometrical ratio by which our population is increasing, and how much the agency of steam, were it only by saving the time of millions in travelling and enabling them to employ in productive industry and in creating the means of subsistence, the time that would otherwise be unproductively employed in travelling; few, I say, are aware how wonderfully in this way steam itself has become an augmenter of population, by augmenting throughout the world the means of subsistence on which the increase of population depends. Now, is any problem so fit to engage the head and heart of the statesman and the philanthropist, as the question, how can this great forthcoming mass of human beings be best employed and fitted to make the most of their faculties, and to enjoy the blessings of liberty? For myself, my anxiety is, as it has ever been, for *the agriculturist—for the tillers of the soil.* Enlighten them; keep them sound and virtuous, and you have the best security that human foresight can desire or establish. Let them, on the contrary, be steeped in ignorance, and its invariable concomitant, liability to corruption and corrupt uses, and you lay the axe at the root of all that is worthy to engage the solicitude and anxieties of the statesman and patriot. The very greatness of your numbers, which, if instructed, would contribute to your national strength, will accelerate the catastrophe of ignorant and populous nations, throwing up their greasy caps and crying hosannahs at the moment of falling the miserable victims to the arts of the demagogue, who always flatters the people while he places the sword in the hands of the despot to enslave them.

Finally, let me exhort you to bear in mind that all plans of reform in reference to this first of all earthly concerns, the education of your children, should equally embrace the appropriate education of your daughters as your sons. As the forward movement of civilization, nay, of liberty itself, has been everywhere attended with improvements in agriculture and in all the social arts and amenities of life, so has it been equally marked by more and more attention to the female sex, and a higher appreciation of the noble office of housewife and mother in every domestic circle. That office of which it was quaintly written three hundred years ago,

> "Though husbandry seemeth to bring in the gains,
> Yet huswifery labours seem equal in pains;
> Some respite to husbands weather may send,
> But huswife affairs have never an end."

But for her, where should we get all our household comforts? What stimulus should we have to cultivate the refinements of life? Why, even in the healing art, her offices are indispensable to raise the head and cheer the drooping spirits of the desponding invalid. Her tender accents and soothing gentleness can minister even to "a mind diseased." So important are her duties and so inimitable her tact in the chamber of sickness, that Doctor Rush being once asked how much the average duration of human life had been increased by the Faculty, answered that it depended on whether the inquirer meant to include old women nurses among the Faculty, because, if they were excluded, the increase had been of little account. But, my friends, earnest, careful attention to female education, is your bounden duty in a much higher sense, and for yet more important considerations. For, after all, is it not by the mother that the first impress is given to the character of the son, as the clay takes its form from

the hands of the potter? It is from her it may be said to *take its set.* Hence the mutual and reflective influence between her and the state of society in all ages. How important, then, to agriculture, regarded as I have endeavoured to present it, as a fit exercise for the mind as well as the body, that daughters who are to be the future mothers of the Republic, should have some insight into botany and natural history, and whatever may fall within the comprehension of their children until they leave the paternal roof, that they may be early inculcated with a love of floriculture and horticulture, and all the elementary branches of agricultural literature, and so be taught

> To make a meditative joy, and find
> Religious meaning in the forms of nature.

On the best Mode of Feeding Cattle.

By Professor Johnston.

The following is the substance of a lecture delivered at Inverness, before the Highland Society of Scotland. After a few preliminary observations, the lecturer observed:

That he appeared before the meeting as the representative of the Agricultural Chemistry Association of Scotland. They had all heard of that Association, and many of them were members of it. The object of the Association in having this meeting was two-fold. Every one, acquainted with the state of agriculture in different parts of Great Britain, cannot have failed to observe certain practices in operation, in various parts, of which agriculturists in general might profitably avail themselves. By going into different counties, they found practical men possessed of knowledge, the diffusion of which would be of the greatest possible advantage to the general mass of the agricultural community. Now, the purpose the Agricultural Chemistry Association had in view—in connection with these general observations—was to collect all the information in their power, through their officers or organs, or through meetings such as this; and having collected that knowledge, their next great object is to diffuse it in such a way as to be productive of the most beneficial results to agriculture in general. Like scattering seed through their fields, the diffusion of that knowledge would produce vegetation in spring, and fruit in autumn, and the more liberal the deposit, the more abundant the return. They were here met together, consequently, in possession of a mass of knowledge in regard to the objects of the Association, so that the agriculturists present might aid them in the diffusion of knowledge. In selecting topics for discussion at these meetings, they looked at the character of the country, and inquired of practical men in the district, what topics were best suited for the purpose of affording useful information; and as the question of the use of prepared food for cattle was one of very general interest in this as well as in other parts of the country, it was to form the first subject of this morning's conversation. The second subject, on the other hand, being one rather pastoral than agricultural, had a direct bearing upon questions of great interest to the farmers of Southerlandshire, and in other districts around Inverness, and in this respect was peculiarly appropriate. In reference to the first question—the feeding of cattle—no district in the island was more interested than this. He could not tell them how much stock was shipped from Inverness last year, but he trusted Dr. Nicol, or some other gentleman, would be able to furnish them with information on the subject. He believed, however, it was to a very large amount indeed; and he had no doubt but it was increased since, by the greater facilities of communication with the London and other markets. As a cattle importing district therefore, the extension of sound information in regard to the economical use of food, must be of the very greatest importance; that is, in what way they could grow the greatest amount of beef or mutton at the least possible expense. This he was prepared to show was to be effected by the use of certain mixed food, and prepared food. An individual going from one end of the country to another to observe the state of agriculture, will look not merely at the kind of stock, but he will more particularly observe the implements of husbandry in use throughout the various districts. In order therefore, to form an estimate of the degree of attention paid to this matter of prepared food in England, on his visit to Newcastle, at the great cattle-show recently held there, he turned his attention particularly to the examination of the implements exhibited, having a bearing upon this point. Amongst these he found chaff-cutters, a peculiar machine for crushing corn and other seeds, and other instruments; all showing how much regard was being paid to this subject by practical men. There was no doubt but that the subject of the quantity of food which cattle require to produce a certain weight of beef, was beginning to attract general attention; but before he entered upon the few points which he meant to notice in connection with this question, perhaps it would be necessary to explain shortly the general composition of food. In all

kinds of bread there were contained three different kinds of matter. First of all there was a certain quantity of fat, which the butter they ate represented; secondly, there was a certain amount of sugar; and then there was besides, the third constituent, which was represented by the white of an egg. Now it was of the very greatest importance what description of food was used, and what proportion it contained of these three kinds of matter, as bearing upon the purpose it was intended to serve. Cattle had in their bodies different kinds of matter, also, but particularly flesh and fat; and the farmer should be sufficiently acquainted with the nature of food, to be able to distinguish what he should use when he wished to produce fat, or when he wished to produce fat and lean both together; and the food which was given would effect the one or the other of these purposes, according to its composition. The white of an egg or albumen would supply nothing, or nearly so, to the animal but muscle. The fat went directly to form fat. The starch in food kept the body warm, and when fat was wanted served the purpose of making the oily matter more readily become fat in the body of the animal.

Now, in fattening cattle, as in everything else, using the proper means produced the proper effects; and after the explanation which he had given, they would see at once that a mixture of food was better than the use of one kind alone. If they wanted to lay on muscle, they would feed with food containing the largest amount of gluten; and if they wanted to lay on the fat, they would give starch and oily substances, and only a small proportion of the other ingredient. Selecting food in any other way would not serve the purpose they had in view in the most economical way. He had a table representing the different proportions of fat in the food which they were in the habit of using; but he would illustrate what he had to say by a few simple illustrations. Wheat contained two per cent. of fat, and sometimes a little more; but oats contained sometimes from four to five per cent., or about double the amount which was to be found in wheat. Oats were next to Indian corn in this respect, the latter of which they were aware contained a large amount of fat. Gluten was the matter out of which the muscle was produced, and there was more of that substance in the bean or the pea, than in the oat; but the oat was better than wheat. But there was another kind of food used for fattening cattle, namely, oil-cake, which contained a greater amount of fat than the same weight of any other kind of grain. Linseed, from which oil-cake is made, differed from other descriptions of grain, in containing a greater amount of fat, and a larger amount of gluten likewise, with the exception of the bean. Now, practical men have derived great advantage from feeding their cattle on oil seeds; that food, from the peculiarity of its composition, laying on fat and muscle at the same time. Oil-cake, however, was the best food, only when the greatest amount of fat was required; and according to the purpose which they had in view, farmers would give their cattle other descriptions of food. It was a remarkable circumstance, that the bean and pea contained very little fat, and as the wheels of the animal system required to be greased, these kinds of grain would not serve for that purpose, although they contained what made muscle. Although beans and peas were good food, therefore, they were not good as the sole food of animals. Besides, they would observe, that from their different constituents, plenty of oil seeds, and plenty of beans and peas, would be far more profitable than if they were to give either of them singly. That was the principle upon which the use of mixed food was founded—to give all the substances the animal required, and to give them at the cheapest rate; and the researches of the scientific man were directed to discovering the means by which these objects could be best accomplished. He had selected oil seeds, but he might have taken potatoes or turnips for his illustration. He had taken the oil seeds, however, because very great attention had been recently directed to the value of those seeds in the feeding of stock, and to the culture of flax, which they knew was advancing with great rapidity in the neighbouring country of Ireland, and which was even progressing in England at a great rate. He might mention a remarkable fact connected with the improvement of the flax cultivation in Ireland, that a society which was established for the encouragement of that cultivation, and which had its seat in Belfast, had an annual revenue of between £2,000 and £3,000; while the income of the Royal Agricultural Association of Ireland was less than one-half of that sum. From the progress the cultivation of flax was making in Ireland, it was very deserving of attention by those who thought a change in the rotation of crops would be useful in other parts of the country. The person who had most directed his attention, practically, to the effects of feeding stock with mixed food, and to feeding on linseed, was Mr. Warnes, of Frimlingham, Norfolk, and he (Professor J.) would point out to them the principles on which he proceeded;

and they were sound scientific principles. He commenced by boiling the linseed in water until it formed a kind of jelly; then he stirred in a quantity of cut straw and chaff, and crushed corn. The mixture was then poured into moulds, and afterwards served to the cattle warm, which they liked remarkably well. With this food the cattle throve, and acquired beef in an extraordinary manner. By this system of feeding, Mr. Warnes said he could compete with any man, whether foreigner or not, as he could send cattle to Smithfield for 4½*d.* per lb., and pay him an ample return; and in illustration of this, he gives the results of two experiments, which he would read to the meeting, and which were as follows:

Since he followed out box-feeding, he knew not a single instance where he had not realized £8 for every head of cattle he had kept for six months. At the farm where he now resided, he had reared for market the following cattle, after only six months' box-feeding:

7 Durham steers, cost £8 10*s.* each, sold for £19 10*s.* each,	£77	0	0
6 Scotch steers cost £8 10*s.* each, sold for £22 10*s.* each,	84	0	0
1 Cow cost £5 5*s.* sold for £15,	9	15	0
4 Scotch steers cost £10 each, sold for £20 each,	40	0	0
	£210	15	0

The above cattle were bought in and disposed of within six months. They consumed, with the following now in herd, nineteen acres of turnips, about fourteen quarters of linseed, and a few bushels of barley-meal, with several acres of pea-straw:

3 Durham heifers, estimated value above the cost price,	£22	10	0
2 Irish steers,	13	0	0
5 Small steers and heifers,	30	0	0
3 Calves, and butter from two cows,	11	0	0
	£76	10	0
Deduct for 14 quarters of linseed, mostly grown upon the farm, £35, also for barley, £4,	39	0	0
	£37	10	0

In reference to Mr. Warnes's experiments, too, it is to be observed that the value of the manure was very much increased in comparison with that derived from the ordinary method of feeding. But, besides this, there was another method of feeding of which he would speak from personal observation, and which he had witnessed in the neighbourhood of Northallerton. He went to that place because he had heard that Mr. Marshall was keeping double the amount of stock, with the same quantity of turnips, that he had been in the habit of doing only two years ago; the other food used being ground oats, barley, rye, and old beans, and chopped hay, instead of straw at times; but the cattle did best with the straw. Hearing, as he had stated, that Mr. Marshall kept double the stock upon the same amount of turnips, by his system of feeding, he—Professor Johnston—was very anxious to see the mode of carrying his system into operation, and went down to Yorkshire for that purpose. There he saw about 200 head of cattle feeding, a portion of which was sold off every week, and their places supplied by others. What struck him as very remarkable, was the state of absolute rest in which he found the cattle. There was not a single beast upon its legs; no motion was observed, which, they were aware, was a circumstance favourable for fattening. In connection with this subject he got the following information, and in order that they might fully understand it, he would present it in a tabular form. It was as follows:

Linseed, 2 lbs., boiled for three hours in four gallons of water; cut straw, 10 lbs.; growing corn, 5 lbs.; mixed with jelly. To be given in two messes, alternately with two feeds of Swedes. Now, the mode in which the linseed was boiled, was of considerable consequence. In the first place it was boiled for three hours. The jelly was then poured upon crushed grain and cut straw, much in the same manner in which a man made mortar, being mixed together with a shovel and allowed to stand for an hour. It was then stirred again, and after a lapse of two hours it was given to the cattle in a hot state, and the result was, that if the animals are fed regularly on this kind of food and turnips alternately, they remain in a state of extraordinary quiet. They become exceedingly fond of it, and commence bellowing whenever they hear their neighbours being served before themselves. The practice was to give them a meal of the linseed mixture at six in the morning, turnips at ten, another mess of linseed in the afternoon, and turnips again in the evening. When he saw them first in the morning, it was after they had got their mess, and he was much astonished to see them, on visiting them on the second occasion, when they were all on the *qui vive* for their meal. Two things were to be observed in regard to this system of feeding—first, that it consisted, in addition to turnips, of a mixture of grain, straw and linseed in certain quantities, given

hot; and the result was double the amount of stock kept on the same amount of land. The proportion of turnips which could be grown upon a farm, usually determined the amount of stock a man might keep; and if by an improvement in the system of feeding, the quantity of cattle could be doubled, by turning the money twice instead of once within a year, the farmer would obtain double the profit. But this was not the only advantage; he would double the manure which he made at the same time, which would contribute very much to the fertility of his land; he being enabled, by the use of this linseed, to return more than he took out of it. The proportion of the food had other important consequences in regard to manuring the soil. The crushing of the grain and seeds, by reducing them to the minutest particles, made the substances of which they were composed more easily assimilated to the food of plants, and made it better manure, because of the extreme division which it had undergone. Now they would observe that, by having this large additional amount of manure, they would get larger crops, and introduce a system which would go on annually increasing the amount of their produce, and consequently the amount of their profits. This would enable them to farm higher, and by farming high, they would keep that place which, he was sure, they now occupied in the history of the world. He would likewise direct their attention to the use of linseed, and the preparation of food, as being of great value in keeping working animals in good condition; but on this point he would not detain them by giving a special detail of facts, as the same general principles applied in the one case which applied in the other. As he had occupied the attention of the meeting at considerable length, he would conclude for the present, reserving any additional remarks which he had to make, and the replies to any questions which the company might think he could usefully answer, until after the general discussion had ended. —*American Journal of Agriculture and Science.*

Anthracite Coal.

The following table shows the quantity of Anthracite Coal sent to market from the different regions in Pennsylvania, from the commencement of the trade in 1820 *to* 1846, *inclusive; with the annual increase, consumption, &c.* [*From the annual official statements published by the Pottsville Miners' Journal.*]

Coal and Iron are becoming, if indeed they have not already become, the great staples of Pennsylvania; and we think it needs no apology for inserting the following table,—developing as it does, such extraordinary facts—in an Agricultural Journal.—Ed.

YEARS.	Schuylkill.	Lehigh.	Lackawanna.	Pine Grove.	Shamokin	Wilkesbarre.	Aggregate	Annual Increase	Consumption.	Unsold April 1	Sold on Canal & R. R.
1820		365					365				
1821		1,073					1,073				
1822		2,240					2,240				
1823		5,823					5,823				
1824		9,541					9,541				
1825	6,500	28,393					34,893	25,352			
1826	16,767	31,280					44,047	13,154			
1827	31,360	32,074					63,434	15,837			3,154
1828	47,284	30,232					77,516	14,082			3,372
1829	79,973	25,110	7,000				112,083	34,567			3,333
1830	89,984	41,750	43,000				174,734	62,651			5,321
1831	81,854	40,966	54,000				176,820	2,086	177,000		6,150
1832	209,271	70,000	84,600				363,871	187,051	298,871	*None.*	10,048
1833	252,971	123,000	111,777				487,748	123,877	434,986	65,000	13,429
1834	226,692	106,244	43,700				376,636	*Dec.*	415,186	117,762	19,429
1835	339,508	131,250	90,000				560,758	184,122	635,935	79,212	18,571
1836	432,045	146,522	103,861				682,428	121,670	632,428	4,035	17,863
1837	523,152	225,937	115,387	17,000			881,476	199,048	680,441	54,035	21,749
1838	433,875	214,211	78,207	13,000			739,293	*Dec.*	788,968	255,070	28,775
1839	442,608	221,850	122,300	20,639	11,930		819,327	80,034	867,000	205,395	30,390
1840	452,291	225,288	148,470	23,860	15,505		865,414	46,087	973,136	157,622	28,924
1841	584,692	142,821	192,270	17,653	11,463		958,899	93,485	958,899	100,000	41,223
1842	540,892	272,129	205,253	32,381	10,000	47,346	1,108,001	149,102	1,158,001	100,000	40,584
1843	677,295	267,734	227,605	22,905	10,000	58,000	1,263,539	155,538	1,263,539	50,000	34,619
1844	839,934	377,821	251,005	34,916	13,087	114,906	1,631,669	368,130	1,631,669	50,000	60,000
1845	1,083,796	429,492	273,435	47,928	10,000	178,401	2,023,052	391,383	2,023,052	50,000	90,000
1846	1,237,004	522,989	320,000	58,926	12,572	192,503	2,343,992	320,940		50,000	125,000
	8,629,746	3,726,135	2,468,870	289,208	94,557	591,156	15,811,204				

The Six best Apples for the Climate of Boston.

The following remarks are made by B. V. French, and we take them from *Downing's Horticulturist*. The editor says the writer "is acknowledged to be the best cultivator of the apple in the neighbourhood of Boston. The selection he recommends, is based entirely on his own practical observations; and we believe he cultivates in the orchards on his estate at Braintree, a larger collection than any amateur in Massachusetts."

To a person whose grounds are limited, and who must, of course, restrict his variety accordingly; it is important that he should make his choice understandingly, and most advantageously. It may be, that the best six varieties in the vicinity of Boston, may not prove the very best in that of Philadelphia.—Ed.

In recommending the six best apples for New England culture, I must, of course, be understood to be confined to this number of trees. Where a larger space and greater variety is permitted, several varieties of high merit would certainly be added. In selecting so small a number, you will understand me to bear in mind such qualities of regular productiveness, fair habit of growth and adaptation to our climate, as make a given variety a constant favourite with the cultivator.

I have also kept in view a succession of fruit for the table and kitchen, so as to serve as a continual supply from midsummer till the succeeding spring.

1st. *Early Harvest.*—For the best early apple worth cultivating, I should name the Early Harvest. The tree, with me, is a free grower, healthy, a profuse bearer, and the fruit hangs well. It ripens the last of July. The fruit is of medium size, roundish, rather flat, and if used when not quite ripe, it is one of the most excellent for pies, tarts, and cooking generally; and when fully ripened on the trees, it becomes of a fine rich yellow, and ranks high as a table fruit.

2nd. *The Porter.*—In succession this excellent fruit follows the Early Harvest; it is also a free growing tree, and a great bearer. The fruit is conical-oblong, yellow; the skin is beautifully smooth and fair, and when fully ripened in the sun, has a fine blush. It is excellent for the table or for cooking, and if properly taken care of, will keep from the time of its ripening early in September, till the middle of October. The many good qualities of this native fruit have made it one of our greatest favourites.

3rd. *Fameuse.**—I know of no apple to take the place of the Fameuse for the table at this season. It is in eating from the middle of October, and with care, continues so till February. The tree, with me, is small in size, and a medium bearer; the fruit is of medium size, flat; the skin is red, smooth, and takes a high polish; the flesh is very white, juicy, and, I think, in flavour, excels all others for table use, from the time the Porter is gone till the Rhode Island Greening comes into use.

4th. *The Rhode Island Greening.*—The tree is a strong, hardy and free grower, and a great bearer. The fruit is flattened, of a yellowish green, with a dull blush. The flesh is tender, juicy, and of fine flavour for cooking or the table. This fruit is in use from September till February, and is fine for the table in November and December. It is too well known and esteemed to need any description of mine, having a prominent place in every good orchard.

5th.—*White Seeknofurther.*—This excellent fruit, I am informed, originated in the garden of the late William Prince, Esq., of Flushing. In point of fine flavour, it excels all other apples that I have eaten. The tree is of medium growth, of a leaning habit, a full bearer every other year. The fruit is rather oblong, greenish with dark spots; and is not a very fair or sightly fruit. Its season is January and February. Its flesh is very juicy, tender, and fine flavoured. This variety is not much known in New England; in fact, I know of but three bearing trees.

6th. *Baldwin.*—This, our most popular New England apple, is the universal favourite as a late winter fruit. Its hardy, healthy habit as a tree, and the heavy and regular crops it bears, together with its fine flavour, render it indispensable here in every orchard.

* Or *Pomme de Neige*, London Hort. Soc. Cat., and Downing's Fruit and Fruit Trees.

For the Farmers' Cabinet.

Brick Making.

During the past winter I spent a few weeks in the city and State of New York, and I returned to New Castle county strongly impressed with the opinion, that it is superior to any place I have seen during my sojourn in New York, for cheap lands easy of culture, good roads, and convenience to market. If we had more of the capital, industry, and *go ahead*, of the North, this county would be the garden spot of America in a few years, with our many natural advantages, having no State tax to pay the interest on annually, or to repudiate, as some of the States have done, to their discredit and disgrace.

While in the county of Rockland, N. Y., I visited several brick yards on the Hudson

river, where I learned they made very good common bricks, well burned, which were sold at a profit, at $2 50 to $3 per thousand, at the different landings on the Hudson river, in Haverstraw township. The advantage of making, drying and burning, is very great over the Delaware mode, as the market price fully proves. The New York price is $2 50 to $3 per M.; our price is $6 to $7 per M. A vast saving might therefore be made, to the citizens of Pennsylvania, Delaware and Maryland, by introducing the New York method of making, drying and burning common brick—well suited for building common houses, barns, walling wells, paving, &c. The bricks are thoroughly burned, and are not the soft, inferior, raw brick we often get, unfit for building purposes. Now as wood is getting scarce, and high prices are paid for building materials, which are often inferior and at best short lived, it appears to me of great importance to the farmers and others to have a supply of cheap brick, as a substitute, for wooden buildings. I call the attention of the agriculturist and the public to the cheap method mentioned above. They use horses, or a steam engine, to prepare the clay and mould the bricks; steam is preferable on a large scale. The off bearer carries, I believe, six bricks at a time, instead of one, as with us, from the mould—they are laid on a yard under roof; the roof can be raised at pleasure to let in the sun to dry the bricks, and let down again, in case of a shower of rain—so they have no washed bricks at any time. In mixing the clay for the mould, fine coal is mixed with the clay, in proper proportion to burn them thoroughly. The kilns are set under the shed also, so that the labourers can make and burn at any time, and be protected from rain. By using the screenings of stone coal in the clay, it requires only one-fourth as much wood as by the old method, and the wood used is chesnut or poplar, of little value for fuel in most places. The kilns are generally fired on Monday, and are done burning before Saturday, in all cases, so that the sabbath may be kept by brick burners in all cases, as it should be by all the citizens of our common country.

If a farmer desires to build a house of brick, and have it dry, let him strip the walls, and lath and plaster as in a frame house, and he has a cheap, durable, neat, dry house, that will last for ages, and do credit to the intelligence and foresight of the age, and render important benefits to the rising generation—as wooden buildings ought to be placed along side of wooden ploughs, the old hand rakes, and the old stages.

All barns might and ought to be built of brick or stone, instead of wood, as the materials for building barns are getting scarce and high, and ought to be preserved for inside work, and other indispensable necessities. Brick is as cheap as wood in many cases, and much more so, if we include the durability and the intrinsic value to the farmer. I hope to see the improved method of making and burning brick introduced into Delaware, in order that the farmer may have a cheap, durable material, for houses and barns, and the old wooden building be supplied by permanent brick ones, and covered with slate, a lasting material, and better than tin, wood, or any other material.

Henry Cazier.

Mount Vernon Farm, Del.,
April 19th, 1847.

For the Farmers' Cabinet.

Remarks on the Purchase of a Horse.

The following directions, &c., were first published in England as part of a prize essay. I copy from Skinner's Farmers' Library, and think they may be valuable to the readers of the Cabinet. When the farmer wishes to purchase a horse, and is obliged to go into the market or to auction to do it, he hardly runs a greater risk in any purchase he makes: and he would do well either thoroughly to acquaint himself in the matter, or take a friend with him who is *at home* when handling the horse. This comes from one who has suffered from his own ignorance.

Equus Caballus.

"Having selected a horse whose *make and shape* please us, our next consideration is his soundness; for, though the horse dealer may declare that he is as *sound as a bell*, we are to take the phrase as one having various meanings, and not be deterred from examining him, and narrowly, too, on that account. *Sight*, *wind*, and *limb*, must be the uppermost objects of inquiry; for nine hundred horses out of a thousand are defective in one of these particulars. First, then, examine his eyes, and do this before he comes out of the stable. Having placed him so that the light may fall upon the eyes but in one direction, see that they are of the same size, and equally full; that the haws are not prominent, and that one does not project more than the other; that the eyes are perfectly clear and transparent; and that the pupils, or *apples of the eyes*, are exactly alike in size as well as colour. A sunken eye, or one over which the lids are partly closed—a projecting haw—an opaque or semi-opeque

front*—a pupil dilated, or a white or clouded one—are so many omens of disease, for which we should reject the *prad* as a *cupid*,† or, what is often worse, a *blinker*, who will shy at all he meets with, and break your neck the first *poser*‡ you ride him at. Having satisfied yourself in regard to his *peepers*, have him *pulled out*, and next proceed to examine his *pipes*. If *good* and *sound*, on being nipped in the gullet, he will utter such a sound as cannot fail to strike the ear as the emission of a good *pair of bellows;* but if his *lungs are touched*, and he is a *piper*,—that is, *broken winded*, or *having no wind at all*—he will give vent to a *dry*, *husky*, *short* cough. Should a horse be suspected of *bad wind*, however, the purchaser cannot do better than direct his attention to the flanks, which, under such circumstances, will work either much quicker than ordinarily, or heave deeply, and with great irregularity; they will be considerably longer in contracting themselves, in order to squeeze the wind out,‖ than in falling to let it in,§ which they do, if he is a *piper*, quite suddenly. But, though not a *piper*, he may be a *whistler*, or, what is worse, a *roarer;* the first may be known by the peculiar *wheezing* he is addicted to when put to sudden or long continued exertion; the latter, by *blowing his horn* clamorously under similar circumstances; and either may be made to display itself, by the purchaser giving him a smart cut, or even feigning to do so, with his *bit of ash*.

Thirdly, and lastly, as to the limbs. If, in passing our hand down his legs, we find any unnatural protuberance, or puffiness, or if, in feeling first one leg and then the other, we discover any difference between them, disease, more or less, is present; he may not be *lame*, but he is not *clean upon his legs*. *Splents*, *windgalls* and *ringbones*, may be present without occasioning lameness, but they are all unnatural, are considered *blemishes*, and are all to be regarded with a suspicious eye, as either denoting past *hard work*, or betokening future evils. On the same principle, a horse may have a *spavin*, and be *only stiff* from it at *starting*, or he may have a *curb*, or a *thorough-pin*, and be *perfectly sound;* but these are still *blemishes*, and as such detract from the intrinsic value of the animal. In explaining the advantages resulting from *good* conformation, we are *naturally* led to make remarks *en passant*, on the disadvantages from *bad;* in pursuance whereof, I have shown *why* such a structure is *bad*, a question that *necessarily* entails upon us the mention of the *disorders originating therein; i. e.* the diseases to which such parts, in consequence of being *malformed* are *predisposed*."

* Transparent cornea. † A blind one. ‡ So called from *pleating* all but the *nonpareils*. ‖ Expiration. § Inspiration.

Horticultural Premiums.

The Pennsylvania Horticultural Society offers the following premiums at its stated meeting on the 18th inst. at eight o'clock, P. M., in the large saloon of the Museum building at the corner of Ninth and George streets.

CAMELLIA.

For the best American Seedling, exhibited to the appropriate committee from December to May, inclusive, $5.

PELARGONIUMS.

For the best ten named varieties, to be exhibited in pots, $5.

For the second best do. do. do. $3.

For the third best do. do. do. $2.

ROSES, *Perpetual.*

For the best six named varieties, to be exhibited in pots, $3.

For the second best do. do. do. $2.

ROSE.

For the best American Seedling, everblooming, in a pot, $3.

CINERARIAS.

For the best four named varieties to be exhibited in pots, $2.

For the second best do. do. do. $1.

CHERRIES.

For the best, one pound, named variety to be exhibited, $2.

CUCUMBERS.

For the best four in number to be exhibited, $2.

For the second best do. do. $1.

RHUBARB.

For the best twelve stalks to be exhibited, $2.

For the second best do. do. $1.

PEAS.

For the best half a peck to be exhibited, $2.

For the second best do. do. $1.

POTATOES.

For the best, a fourth of a peck to be exhibited, $2.

For the second best do. do. $1.

And at the intermediate meeting on the 1st proximo:

ROCKET LARKSPURS.

For the best twelve in number to be exhibited, $2.

CHERRIES.

For the best, three pounds of one or more named varieties, $2.

For the second best do. do. do. $1.

STRAWBERRIES.

For the best, two quarts of one or more named varieties, $2.

For the second best do. do. do. $1.

TURNIPS.

For the best, one dozen, grown in the open ground, to be exhibited, $1.

And at the stated meeting on the 15th proximo:

PINKS.

For the best, six named varieties to be exhibited, $2.

For the second best do. do. $1.

For the best American Seedling, do. $2.

GRAPES.

For the best, three bunches, of a black variety to be exhibited, $3.

For the best, three bunches, of a white variety, to be exhibited, $3.

PEARS.

For the best, one dozen to be exhibited, $2.

CHERRIES.

For the best, three pounds of one or more named varieties, $2.

For the second best do. do. do. $1.

ARTICHOKES.

For the best, six heads to be exhibted, $2.

For the second best do. do. $1.

Time for Budding Fruit Trees.

August has been generally considered the best month for budding, but other months are found to answer quite as well. Pear trees that are not in rich ground should be budded earlier than August, for they often cease to extend their limbs in July, and when they have stopped growing, the buds that we insert, are not likely to live.

The peach in nurseries continues to grow to a late day, and when they are thrifty, August is soon enough to insert buds.

Some nurserymen prefer budding to grafting apple trees; and we must say we have been most successful in budding. In grafting if the scion does not live we lose the stock, or we are obliged to wait for a sprout to grow large enough to be operated upon. In case of the failure of a bud in August, the stock in which it was inserted may have a graft in the spring, thus the nurseryman will stand a double chance of keeping his rows full.

The operation of budding is quite simple, yet some of our young friends have never seen it performed, and we will try to describe it, though it is a harder job than to bud a stock. The bud should be cut from a limb or twig of this year's growth; and a slip of bark should be taken from the twig with the bud one inch in length—half of this slip above and half of it below the bud. A little of the sap wood of the twig will naturally be sliced off, and will adhere to the bark enclosing the bud. It has been customary to peel out this sap wood and leave nothing but clear bark with the bud, but unless this is done with caution, a vital part of the eye of the bud will come out also and spoil the bud. Some, in slicing off the bud take but little of the sap wood from the twig, and they let that remain.

As soon as the bud is prepared take a sharp penknife and cut a perpendicular slit in the stock one inch long, and as near the ground as you can with convenience. You must cut quite through the bark; at the bottom of this slit cut another at right angles, or directly *across* the stock, so deep as to enable you to raise the bark or peel it up enough to admit the bud under it; this may be done with a smooth bit of iron or ivory; the bud should then be run under the bark and should be slid up as far as the slit will admit; if the bark of the bud is too long for the slit it should be cut off square with the cross cut in the stock, and the bud should be kept in place by tying some matting around the stock above and below the bud.

Some choose the month of June for budding; in this case the bud will become a limb in the same season. When the buds are inserted early, care must be taken to cut the matting or to loosen it on finding that the stock wants more room.—*Massachusetts Ploughman.*

For the Farmers' Cabinet.

Prevention of Rot in the Potatoe Crop.

Mr. Editor,—Dear Sir: The general failure of the potatoe crop in old Ireland, and the partial failure for several seasons of this most valuable esculent in this country, has induced me to hand you a brief detail of my method of successfully cultivating this root.

The first season the rot made its appearance in this country, I had about my usual breadth in potatoes, a small portion of which was in two low spots of land, and in these spots, on taking out my crop, I found an

abundant yield of large potatoes much affected by rot; from that time I have selected a dry, healthy soil, for planting my potatoes.

My land having been laid down in grass for three years, is ploughed for corn about nine inches deep, and for this crop I put on from 50 to 70 bushels of stone lime per acre. The season following, I plough the same land full as deep as it had been ploughed the preceding year; harrow it down fine, and again cross-plough in the potatoe seed with the manure, about half the depth of the previous ploughing—say four to four and a half inches: thus the land being loose under the potatoes, when the sudden falls of rain which we often have in August, occur, succeeded by a scorching sun, the water passes down from the potatoe, and the vegetable remains uninjured.

Truly yours,

WM. CRISPIN.

Marlborough Farm, Great Timber Creek, New Jersey.

Anthracite Coal.

MEN of middle age can well remember when the anthracite coal lands of Pennsylvania could all have been purchased for a trifle; and yet these same lands, so recently deemed worthless, have sent two millions of tons of coal to market the present year, and have yet in store vast deposits of the same fuel, to give warmth, illumination, and motive power to generations to come.

What is true of the coal, is also true respecting the iron banks of central and western Pennsylvania, which enable the city of Pittsburg alone, to manufacture more iron than all Great Britain at the close of the American revolution. The same remark will apply also to the great deposit of salt and lead west of the Alleghanies.—*Montreal Herald.*

SHEEP TRADE.—The Pittsburg Gazette says a large operation is going on in an adjoining county in Ohio, in slaughtering sheep, feeding hogs with the offal, rendering the carcase into tallow, curing the hams for market, and preparing the pelts in a mercantile manner. Last season about 20,000 sheep were thus "manufactured." This season 1000 hogs are fatting at one establishment.

At Cleveland, beef packing has commenced in earnest. Mr. Leman is putting up superior beef for the English market. He has killed 3000 head, and shipped 1500 tierces. Thirty to forty head are killed per day. Part of the beef will be shipped via New Orleans. The Ohio cattle are represented as being remarkably fine this year.

NURSERIES.—We learn that nurseries are increasing in every direction; so much the better. It is time to cut down many of our old orchards and begin on better plans. We need not fear being over stocked with winter fruit, for our market is unlimited; we send apples to Europe, to the East Indies, to the West Indies, and to South America. Our northern apples are preferred to those of the middle States, for they can be longer kept. What can we do better than to supply the world with the fruits that are adapted to our climate? If we cannot compete with the West in the articles of corn and grain, we can raise better apples than any of them and make a more ready market.

We are pleased that many farmers are now aware that one apple tree in tilled land, or in a hog-yard, is worth half a dozen standing in unbroken sward land.—*Massachusetts Ploughman.*

A WRITER in the Boston Courier, over the signature of "J. N. B.," estimates the rise in value on the agricultural productions of the United States, since September 1, 1846, as follows: On the crop of Indian corn,—estimated at 480,000,000 bushels—the advance—estimated at 25 cents per bushel—is $120,000,000; on the crop of wheat the advance is estimated at $56,000,000; on the crop of oats $16,000,000; rye $36,000,000; on the crop of hay the advance—in consequence of the increased use of corn and other grains for bread stuffs—is estimated at $45,000,000. Showing a total rise in value of $273,000,000.—*Enquirer.*

COMPOSITION FOR SHOES.—Two parts of tar, two of beef's tallow, and one of beeswax, make a good composition for boots and shoes. Apply it quite warm, and warm the leather that it may penetrate. As farmers are frequently exposed to wet, they should be careful to keep their feet dry and warm, for on this their health and comfort in a great measure depend. There are various compositions that are good to resist water and preserve leather, and the proportion of the above may be varied. Tar and tallow will answer alone; so will tallow and beeswax. Linseed oil is used as a good ingredient in water proof composition. Neat's foot oil is excellent and preserves the leather soft.—*Exchange paper.*

The English papers state that a lad of seventeen years had died recently in the hospital of Navan, of Glanders, contracted from a horse which he had attended. The disease was received by the boy through a slight cut on one of his fingers. Horses may sometimes be cured of this frightful disease, but a remedy for the human subject has hitherto, we believe, been beyond the reach of medicine.

Grant Thorburn says that his wife has lost but one tea-spoon since they have kept house. "I now have," says he, "silver tea-spoons in my house, and in daily use, which I bought forty-five years ago, and tablespoons I bought thirty years ago—but my wife always counted them when they went into the kitchen—had them brought up and put into her own hands—thus we have lost only one tea-spoon since we commenced housekeeping."

THE FARMERS' CABINET,

AND

AMERICAN HERD-BOOK.

Philadelphia, Fifth Month, 1847.

The spring has been cool, dry, and consequently backward. The peach crop, it is feared, was seriously injured by the frosts of last month, and many of our friends have advised us that the promise of apples was not flattering. The winter too, has been an unfavourable one for wheat, as there was much freezing and thawing, and the ground was a good deal bare of snow. It is, however, too early to speak with any degree of certainty of any of these crops. We will hope that our markets will be liberally supplied in their season with the peach and the apple, and that the early and the latter rain will yet cause the field of the husbandman to wave with its wonted abundance, and that when the sickle is thrust in, a harvest of many fold may be gathered. Prices of bread stuffs continue high, in consequence of the undiminished demand abroad: and this renders a full harvest of great importance to every one of us. Our granaries and our corn cribs will be far more than usually drained, and our reliance for the supply of our own wants during the coming year, must be mainly upon the crop of the year.

It is delightful to perceive the whole country, as with the heart of one man, responding to the call of distress and destitution in Ireland and other places: not only because of the evidence it affords of our disposition to discharge this part of a Christian's duty, but also because of its tendency to draw more firmly together the bonds of our relationship with other nations, and place in a conspicuous light the incomparably superior pleasure there is to be enjoyed in bestowing benefits, than inflicting injuries.

Flour is worth about $7 50 per barrel; wheat $1 50 to $1 75 per bushel; corn $1; oats 50 to 60 cents. Potatoes bring $1 per bushel, readily in our markets. Hay is worth from $14 to $18 per ton, according to quality.

Unusually large breadths of corn have been planted this spring, and our supply of *Poudrette* fell greatly behind the demand. We regret that so many should be disappointed, and unable to obtain it. We began the season with a large stock on hand, but it was exhausted towards the close of last month. We are now however prepared to meet any calls. The Poudrette has been heretofore considerably used, and to good purpose, to put around the corn hills just previous to the first harrowing or ploughing, when it can be covered from the sun.

Attention is invited to the sale of a part of James Gowen's stock of splendid cattle and swine, as advertised in this number, to take place on the 27th inst. It is unnecessary to say anything in reference to the character of the animals now offered, as both their breeder and they, are well known. Persons wishing to possess prime specimens, will of course be in attendance, and avail themselves of this rare opportunity.

Lea & Blanchard, of this city, have just published in neat duodecimo form, "A DICTIONARY of MODERN GARDENING. By George William Johnson, Esq., Fellow of the Horticultural Society of India; corresponding member of the Royal Caledonian, and Maryland Horticultural Societies; author of the Principles of practical Gardening; the Gardeners' Almanac, &c., with 180 wood cuts:" and edited, with numerous additions, by our fellow townsman David Landreth,—Price, $2.25.

Utility, as the author says, has been his principal object. He has endeavoured to collect in as small compass as practicable, a well arranged record of Gardening as it is. To attain this object, he has drawn aid from the best living authors, as well as from their published works, but has not neglected that of other periods, where he discovered in them, directions, upon which the moderns have not improved.

This edition has been very considerably altered from the original by the American editor, in order to adapt it more thoroughly to the wants and climate, and practice of this country. It will, we are satisfied, be a valuable addition to the Gardeners' Library—and indeed, to the shelf of the farmer, who at all appreciates the value of his kitchen garden.

The quantity of rain which fell in the 4th month, 1847, was only a little more than half an inch.

0.585 in.

Penn. Hospital, 5th mo. 1st.

☞ SHORT ADVERTISEMENTS,

The subject matter of which, may correspond with the agricultural character of this paper, will be inserted at the rate of one dollar for each insertion of ten lines or less; and so in proportion for each additional line. Payment in advance.

SEED STORE,

No. 23 Market Street, Philadelphia.

The subscriber keeps constantly a supply of White and Red Clover, and other grass seeds; fresh Perennial Rye-grass, and Lucerne seed. Field seeds, consisting of choice Spring Wheat, Barley, Potatoe Oats, Northern and other seed-corn. Also, in season, Fruit and Shade Trees. Garden and Bird seeds generally. Guano in parcels to suit purchasers.

M. S. POWELL.

Philad., Feb., 1847. tf.

FOR SALE,

AT D. O. PROUTY'S

AGRICULTURAL WAREHOUSE,

No. 194½ Market Street, Philadelphia,

Corn-Shellers in great variety, price from $1 50 to $50 each; Hovey's Patent Hay, Straw, and Corn-stalk Cutters; Grant's Patent Fan Mills, for chaffing and screening wheat at one operation, warranted to take out cockle, cheat and smut. Also good Fans, for $14 to $18 each.

Whitman's Horse-powers and Threshing Machines, with Straw Carriers and Fan Mills attached; Spain's Improved Barrel Churns, the dashers of which may be taken out to clean. Cheese-presses, &c.; Centre-Draught, Self-sharpening, Right & Left-hand Ploughs, warranted to give satisfaction in their operation.

May 15th—tf.

Agency for the Purchase & Sale of

IMPROVED BREEDS OF CATTLE & SHEEP.

The subscriber takes this method of informing his friends and the public, that he will attend to the purchase and sale of the improved breeds of cattle, sheep, swine, poultry, &c , for a reasonable commission. All letters post paid, addressed to him at Philadelphia, will be attended to without delay.

AARON CLEMENT.

April 15th, 1847.

REMOVAL.

....

H P. M. BIRKINBINE,

Has removed to No. 17 South Eighth Street, Philadelphia, where he is still prepared to furnish

Hydraulic Rams, Pumps, &c.

Of all sizes and kinds, for the supply of water to *Villages, Factories, Roilroad Stations, Farms, &c.* He will continue to put them in operation and furnish the pipe and fixtures when required.

H. P. M. B. hopes by his attention and experience to retain the generous patronage extended to him.

A Ram may be seen in operation at his shop in Shoemaker Street, (running East from Eighth, a few paces south of Market.)

May 15th.—1t.

COATES' SEED STORE,

No. 49 Market Street,

FRESH TIMOTHY SEED,

Of various qualities, from good common seed to the purest and finest that can be produced,

TOGETHER WITH A COMPLETE ASSORTMENT OF

GRASS & GARDEN SEEDS,

Of the finest Quality and best Varieties,—Bird Seeds, &c.

JOS. P. H. COATES,

Successor to George M. Coates.

May 15th, 1847.

PUBLIC SALE OF

SPLENDID DURHAM CATTLE

AND

CHOICE YOUNG SWINE,

From the Herds of

JAMES GOWEN, Mount Airy,

To be Sold by C. J. WOLBERT & Co.

On Thursday May 27th, at 11 o'clock, A. M.

Either at Mount Airy or the Rising Sun, the place to be designated in future advertisements, and in catalogues, to be issued some time previous to sale, consisting of Imported Durham Cows, and young Bulls and Heifers and Calves derived from Imported Stock.

Among the Cows are the celebrated *Dairy Maid, Imported Walnut, Victoria, &c., &c.*, all in calf—also numerous of their offspring by *Leander, Prince of Wales, &c.* The Swine consists of young Boars and Sows reared expressly for breeders.

May 3rd, 1847.

NEW

Horticultural and Agricultural Ware-house,

84 Chesnut Street below Third, South side.

The subscriber has for the better accommodation of his customers, opened the above ware-house, with a large stock of Garden and Field Seeds, crop of 1845. Implements and Books on Gardening and Farming; he calls the particular attention of farmers to his pure stock of Sweede Turnips, Field Carrots, Beets and Parsnips, Pruning Shears, Saws and Knives.

March 14th, 1846.—1y. R. BUIST.

COAL.

The subscriber has made an arrangement for a constant supply of superior Lehigh and Schuylkill Coal—carefully prepared for family use, which he will furnish *at the usual cash prices*, on application at the office of the Farmers' Cabinet, where samples of the different kinds and sizes may be seen.

JOSIAH TATUM.

Philadelphia, Third month 15th, 1847.

We keep on hand at this office, and will supply our friends with Agricultural works generally. Among which are

THE FARMER'S ENCYCLOPEDIA, full-bound in leather;—Price	$3 50
YOUATT ON THE HORSE, with J. S. Skinner's very valuable Additions;	2 00
BRIDGEMAN'S GARDENER'S ASSISTANT;	2 00
THE AMERICAN POULTRY BOOK;	37½
THE FARMER'S LAND MEASURER;	37½
DANA'S MUCK MANUAL;	50
Complete sets of the FARMERS' CABINET, half-bound, 10 vols.	8 50
DOWNING'S Landscape Gardening,	3 50
Downing's Fruits and Fruit Trees of America,	1 50
SKINNER'S Every Man his own Farrier,	50
AMERICAN Poulterer's Companion,	1 25
BOUSSINGAULT'S RURAL ECONOMY,	1 50
FARMERS' & EMIGRANTS' HAND-BOOK,	1 00
MORRELL'S AMERICAN SHEPHERD,	1 00
STABLE ECONOMY,	1 00
BEVAN on the HONEY BEE,	31¼
BUISTS' ROSE MANUAL,	75
THOMAS' FRUIT CULTURIST,	50
SKINNER'S CATTLE & SHEEP DOCTOR,	50
AMERICAN FARRIER,	50
THE FARMER'S MINE,	75
HOARE ON THE VINE,	62½
HANNAM'S Economy of Waste Manures,	25
LIEBIG'S AGRICULTURAL CHEMISTRY,	25
" ANIMAL CHEMISTRY,	25
" FAMILIAR LETTERS,	12½
JOHNSON'S DICTIONARY OF MODERN GARDENING,	2 25

Subscriptions received for Colman's Agricultural Tour—or single numbers sold.

☞ We are prepared to bind books to order.

AFRICAN GUANO.

First quality African Guano, from the island of Ichaboe, warranted genuine. Also a few tons Peruvian.

For sale by J. B. A. & S. ALLEN,
No. 7 South Wharves, 2nd Oil Store below Market street.

Philadelphia, March 17th, 1847.

Poudrette.

A valuable manure—of the best quality, prepared in Philadelphia, for sale at the office of the Farmers' Cabinet, No. 50, North Fourth Street, or at the manufactory, near the Penitentiary on Coates' street. Present price, $2 00 per barrel, containing four bushels each, or 40 cents a bushel. Orders from a distance, enclosing the cash, with cost of porterage, will be promptly attended to, by carefully delivering the barrels on board of such conveyance as may be designated. The results on corn and wheat have been generally very satisfactory. Farmers to the south and in the interior, both of this State and of New Jersey, are invited to try it. We are now able to supply the demand for corn.

JOSIAH TATUM.

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It is issued on the fifteenth of every month, in numbers of 32 octavo pages each. The subjects will be illustrated by engravings, when they can be appropriately introduced.

Terms.—One dollar per annum, or five dollars for seven copies—*payable in advance.*

All subscriptions must commence at the *beginning* of a volume. Having lately struck off a new edition of one or two of the former numbers, which had become exhausted, we are now able to supply, to a limited extent, any of the back volumes. They may be had at one dollar each, in numbers, or one dollar twenty-five cents half-bound and lettered.

For seven dollars paid in advance, a *complete set* of the work will be furnished in numbers, including the 11th volume. The whole can thus readily be forwarded by mail. For twenty-five cents additional, per volume, the work may be obtained neatly *half-bound and lettered.* Copies returned to the office of publication, will also be bound upon the same terms.

By the decision of the Post Master General, the "Cabinet," is subject only to newspaper postage. To any Post office within thirty miles of Philadelphia, they will go free of charge.

Joseph Rakestraw, Printer.